MERCY

SISTERS OF MERCY
HEALTH SYSTEM

St. John's Regional Medical Center
2727 McClelland Boulevard
Joplin, Missouri 64804-1694
(417)625-2727

May 18, 2011

AWMD / WEMM
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MAY 31, 2011
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Attn: Michael J. Martin
Environmental Scientist
U.S. Environmental Protection Agency, Region VII
901 North 5th Street
Kansas City, Kansas 66101

To whom it may concern:

Enclosed is the written response to Notice of Violation issued after the RCRA inspection conducted 05/04-05/2011 by inspector Michael J. Martin with the U.S. Environmental Protection Agency, Region 7.

St. John's Regional Medical Center is working diligently to remain in compliance with hazardous waste disposal regulations. We have addressed the issues presented in the Notice of Violation and have established management plans to correct all violations cited.

Thank you,

Spencer Dobbs
Safety Officer
2817 McClelland Blvd.
Joplin, MO 64804-1694
Phone: 417-625-2007
Fax: 417-625-2292

507900
RCRA

St. John's Regional Medical Center
EPA ID # MOD076262500
MO ID # 001204

ST. JOHN'S REGIONAL MEDICAL CENTER - EPA RESPONSE

May 18, 2011

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ST. JOHN'S

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ST. JOHN'S REGIONAL MEDICAL CENTER - EPA RESPONSE

Contact Sheet

Citation #	Name	Organization	Phone #
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All	David Watt	Mercy- St. John's Joplin	417-625-2280
All	Kevin Fitzpatrick	Mercy- St. John's Joplin	417-625-2114
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1: A-D	Nick Nicolopoulos	Clean Harbors ES	773-412-4246
1: A-D	Randy Bechtel	Mercy- St. John's Joplin	417-625-2450
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1: F	Connie Wilkins	Mercy- St. John's Joplin	417-625-2129
1: F	Tom Theile	Mercy- St. John's Joplin	417-625-2129
1: G	Keith Zorn	Mercy- St. John's Joplin	417-625-2026
1: G	Gary Bartz	Mercy- St. John's Joplin	417-625-2024
1: G	Randy Wrensch	Mercy- St. John's Joplin	417-625-2026
2	David Green	Missouri DNR	573-751-3204
3, 4, 5, 6	Karen Adkins	Mercy- St. John's Joplin	417-625-2135
3, 4, 5, 6	Connie Wilkins	Mercy- St. John's Joplin	417-625-2129
3-10	Jerry Brimm	Mercy- St. John's Joplin	417-625-2150
7, 8, 9, 10	Jerry Lawrence	Mercy- St. John's Joplin	417-625-2148

MERCY
ST. JOHN'S

Citation 1: Hazardous waste determination not conducted: Date Completed:
Ref: 10 CSR 25-5.262(1) incorporating 40 CFR 262.11 5/6/2011

Part A: Waste pharmaceuticals (partially used, etc.) generated in the Pharmacy sent to EXP and/or disposed with Biohazardous waste (red and yellow bags)

1) a) Waste Name: Non-controlled substance waste medications

b) Hazardous Waste Determination: Hazardous (tabs 25-27)

c) Method Used to Make Determination: Process Knowledge

i. Following guidelines set by parent company, Sisters of Mercy (tab 2)

ii. Mercy has contracted to handle all medications as RCRA hazardous waste in order to, *"simplify segregation for nursing staff* (Waste Streams)."

d) This hazardous determination is purposefully general and encompasses all RCRA waste codes.

e) i. Quantity of monthly generation: Approximately 50 lbs (includes citations 1-A and 1-B)

ii. Length of time waste has been generated: Contracted with EXP since 2009

iii. Management Plan: All non-controlled substance waste medications (partials and patient contacted) will be are treated as U-listed waste. This includes but is not limited to; oral solid, partial contents of vials or syringes, and partial contents of medication containing IV solutions. For full list see tab 2

f) Waste Disposal: All non-controlled substance waste medications will be disposed of in a black lidded container. Disposal services for all Pharmacy waste streams will be contracted with Clean Harbors beginning June 13th, 2011 (tab 3). Contract signed April 13th, 2011.

2) Changes in Procedure: Clean Harbors will evaluate our current procedures, implement changes, and provide training (tab 3). This 6 week process begins June 13th, 2011.

3) Actions Taken to Correct Violation:

- Made a hazardous determination.
- Identified appropriate handling procedures and waste stream for product.
- Contracted with Clean Harbors to implement comprehensive evaluation and training for Pharmacy hazardous waste disposal.

4) Reference Material: All items both cited above and referenced in the creation of citation 1-A response are found in tabs 2, 3, and 25-27 or this report.

Citation 1: Hazardous waste determination not conducted: Date Completed:
Ref: 10 CSR 25-5.262(1) incorporating 40 CFR 262.11 5/6/2011

Part B: Partially used/patient contacted drugs/chemicals (pills, medications, inhalers, etc.) generated on patient floors or sent to the Pharmacy (both disposed of with biohazardous waste)

1) a) Waste Name: Non-controlled substance waste medications

b) Hazardous Waste Determination: Hazardous (tab 25-27)

c) Method Used to Make Determination: Process Knowledge

i. Following guidelines set by parent company, Sisters of Mercy (tab 2)

ii. Mercy has contracted to handle all medications as RCRA hazardous waste in order to, *"simplify segregation for nursing staff* (Waste Streams)."

d) This hazardous determination is purposefully general and encompasses all RCRA waste codes.

e) i. Quantity of monthly generation: Approximately 50 lbs (includes citation 1-A and 1-B)

ii. Length of time waste has been generated: Contracted with EXP since 2009

iii. Management Plan: All non-controlled substance waste medications (partials and patient contacted) will be are treated as U-listed waste. This includes but is not limited to; oral solid, partial contents of vials or syringes, and partial contents of medication containing IV solutions. For full list see tab 2.

f) Waste Disposal: All non-controlled substance waste medications will be disposed of in a black lidded container. Disposal services for all Pharmacy waste streams will be contracted with Clean Harbors beginning June 13th, 2011 (tab 3). Contract signed April 13th, 2011.

2) Changes in Procedure: Clean Harbors will evaluate our current procedures, redesign, implement changes, and provide training (tab 2). This 6 week process begins June 13th, 2011.

3) Actions Taken to Correct Violation:

- Made a hazaroudous determination.
- Identified appropriate handling procedures and waste stream for product.
- Contracted with Clean Harbors to implement comprehensive evaluation and training for Pharmacy hazardous waste disposal.

4) Reference Material: All items both cited above and referenced in the creation of citation 1-B response are found in tabs 2, 3, and 25-27 of this report.

Citation 1: Hazardous waste determination not conducted: Date Completed:
Ref: 10 CSR 25-5.262(1) incorporating 40 CFR 262.11 5/6/2011

Part C: Chemotherapy waste (clean up debris, gloves, tubing, vials/containers with excess, etc.)

1) a) Waste Name: Chemotherapy Waste

b) Hazardous Waste Determination: Hazardous (tabs 25-27)

c) Method Used to Make Determination: Process Knowledge

i. Following guidelines set by parent company, Sisters of Mercy (tab 2)

ii. Mercy has contracted to handle all medications as RCRA hazardous waste in order to, *"simplify segregation for nursing staff* (Waste Streams)."

d) This hazardous determination is purposefully general and encompasses all RCRA waste codes.

e) i. Quantity of monthly generation: 180 lbs. (tab 5)

ii. Length of time waste has been generated: Contracted with EXP since 2009

iii. Management Plan: Materials that were used to prepare or administer chemotherapy drugs will be disposed of in a yellow container. Empty syringe vials and needles will be disposed of in a hard lidded yellow container. All other chemotherapy waste will be disposed of in a yellow bag (tab 2).

f) Waste Disposal: Final disposal of chemotherapy waste will be contracted through Clean Harbors. Disposal services for all Pharmacy waste streams will be contracted with Clean Harbors beginning June 13th, 2011 (tab 3). Contract signed April 13th, 2011.

2) Changes in Procedure: Clean Harbors will evaluate our current procedures, implement changes, and provide training (tab 3). This 6 week process begins June 13th, 2011.

3) Actions Taken to Correct Violation:

- Made a hazardous determination.
- Identified appropriate handling procedures and waste stream for product.
- Contracted with Clean Harbors to implement comprehensive evaluation and training for Pharmacy hazardous waste disposal.

4) Reference Material: All items both cited above and referenced in the creation of citation 1-C response are found in tabs 2, 3, 5, and 25-27 of this report.

Citation 1: Hazardous waste determination not conducted: Date Completed:
Ref: 10 CSR 25-5.262(1) incorporating 40 CFR 262.11 5/6/2011

Part D: Used Chemotherapy hood filters

1) a) Waste Name: Chemotherapy Waste- Used Hood Filters

b) Hazardous Waste Determination: Hazardous (tabs 25-27)

c) Method Used to Make Determination: Process Knowledge

i. Following guidelines set by parent company, Sisters of Mercy (tab 2)

ii. Mercy has contracted to handle all medications as RCRA hazardous waste in order to, "*simplify segregation for nursing staff* (Waste Streams)."

d) This hazardous determination is purposefully general and encompasses all RCRA waste codes.

e) i. Quantity of monthly generation: 4 waste filters produced annually; or 2 waste filters produced semi-annually (tab 4)

ii. Length of time waste has been generated: We do not store this waste. It is collected 2 times annually and disposed of immediately.

iii. Management Plan: Materials that were used to prepare or administer chemotherapy drugs will be disposed of in a yellow container. Used chemotherapy hood filters are considered contaminated debris and will be handled as hazardous waste (tab 2).

f) Waste Disposal: Final disposal of chemotherapy waste will be contracted through Clean Harbors. Disposal services for all Pharmacy waste streams will be contracted with Clean Harbors beginning June 13th, 2011 (tab 3). Contract signed April 13th, 2011.

2) Changes in Procedure: Clean Harbors will evaluate our current procedures, implement changes, and provide training (tab 3) This 6 week process begins June 13th, 2011.

3) Actions Taken to Correct Violation:

- Made a hazardous determination.
- Identified appropriate handling procedures and waste stream for product.
- Contracted with Clean Harbors to implement comprehensive evaluation and training for Pharmacy hazardous waste disposal.

4) Reference Material: All items both cited above and referenced in the creation of citation 1-D response are found in tabs 2-4, and 25-27 of this report.

Citation 1: Hazardous waste determination not conducted: Completion Date:
Ref: 10 CSR 25-5.262(1) incorporating 40 CFR 262.11 5/4/2011

Part E: Spent 3M 1222 indicator tape (6 rolls per week)

1) a) Waste Name: Spent 3M 1222 indicator tape containing lead

b) Hazardous Waste Determination: Hazardous (tabs 25-27)

c) Method Used to Make Determination: Process Knowledge

i. Contains Lead: RCRA listed waste

ii. 40 CFR 261.24 Exhibits toxic characteristics (tab 9)

d) RCRA Waste Codes: Lead: D008

e) i. Quantity of monthly generation: 22-26 rolls

ii. Length of time waste has been generated: 5-6 years. We do not store this product on site

iii. Management Plan: Central Sterile will switch to 3M 1322/1355 lead-free steam indicator tape within the calendar month.

f) Waste Disposal: Existing stock of 3M 1222 indicator tape will be packaged as hazardous waste sent for disposal through Stericycle. New stock contains no hazardous substances and exhibits no hazardous characteristics. It will be disposed of in the regular trash.

2) Changes in Procedure: There are no changes to Central Sterile procedures, only the product used.

3) Actions Taken to Correct Violation:

- Made a hazardous determination.
- Identified appropriate handling procedures and waste stream for product.
- Adopted use of lead-free alternative (tab 6).

4) Reference Material: All items both cited above and referenced in the creation of citation 1-E response are found in tabs 6-10, and 25-27.

Citation 1: Hazardous waste determination not conducted: Completion Date:
Ref: 10 CSR 25-5.262(1) incorporating 40 CFR 262.11 5/5/2011

Part F: Spent MRSA cartridges (3 to 4 per day)

1) a) Waste Name: Spent MRSA cartridges

b) Hazardous Waste Determination: Hazardous- mixed (biohazard and RCRA) (tabs 25-27)

c) Method Used to Make Determination: Process Knowledge and Analytical testing for pH

i. Contains Sodium Hydroxide solution: D002, corrosive, USDOT Class 8, UN1824

ii. Tested pH using pH strip test, results: pH >12.5

iii. 40 CFR 261.24 Exhibits Corrosive Characteristics (tab 18)

- pH <= 2 or >= 12.5

d) RCRA Waste Codes: Corrosive: D002 (tab 26)

e) i. Quantity of monthly generation: approximately 150 cartridges

ii. Length of time waste has been generated: 11 months; June, 2010 to present

- Stored beginning 5/5/11

iii. Management Plan: Spent MRSA cartridges will be placed in container labeled "Hazardous Waste" at the site of generation and dated with the date of accumulation.

f) Waste Disposal: When container is full, arrangements will be made to dispose of the waste through licensed vendor, Veolia or Clean Harbors.

2) Changes in Procedure: Lab policies have been changed to reflect changes in MRSA testing procedures.

3) Actions Taken to Correct Violation:

- Made a hazardous determination.
- Identified appropriate handling procedures and waste stream for product.
- Changed policies/procedures (tabs 15 and 16)
- Conducted employee training on appropriate MRSA cartridge handling procedures.

4) Reference Material: All items both cited above and referenced in the creation of citation 1-F response are found in tabs 15, 16, 18, 25-27, and 30.

Citation 1: Hazardous waste determination not conducted: Completion Date:
Ref: 10 CSR 25-5.262(1) incorporating 40 CFR 262.11 5/12/2011

Part G: Rags contaminated with lead solder (5 to 6 per year)

1) a) Waste Name: Lead solder contaminated rags

b) Hazardous Waste Determination: Hazardous (tabs 25-27)

c) Method Used to Make Determination: Process Knowledge

i. Contains Lead: RCRA listed waste

ii. 40 CFR 261.24 Exhibits toxic characteristics (tab 11)

d) RCRA Waste Codes: Lead: D008

e) i. Quantity of monthly generation: < 1 per month

ii. Length of time waste has been generated: None were present at time of inspection. Not commonly generated.

iii. Management Plan: Use of rags/paper towels to clean tools is prohibited. When station is in use the sponge on the station is the only article used for cleaning.

f) Waste Disposal: Lead contaminated waste will be scheduled for disposal through Stericycle. The sponge used at the solder station is a considered a product while being used for its intended purpose. Once unusable, the sponge will be handled as hazardous waste (tab 31).

2) Changes in Procedure: St John's associates will no longer use rags/paper towels to clean solder tools.

3) Actions Taken to Correct Violation:

- Made a hazardous determination.
- Identified appropriate handling procedures and waste stream for product.
- Implemented training on proper handling procedures for rags and debris contaminated with lead for Clinical Engineering associates (tabs 12 & 13)

4) Reference Material: All items both cited above and referenced in the creation of citation 1-G response are found in tabs 11-13, 25-27, and 31.

Citation 2: Facility notification not current (zip code and site contact information).
Ref: 10 CSR 25-5.262(2)3.B

Completion Date: 5/18/2011

3) Actions Taken to Correct Violation:

- Submitted form MO 780-1164 (04-10) (tab 14)
- Established mechanisms of notification to alert responsible personnel of required submission

2) Changes in Procedure: No changes were made to policies or procedures.

3) Reference Material: All items both cited above and referenced in the creation of citation 2 response, are found in tab 14 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 3: Hazardous waste storage container not marked with the date of accumulation.

Part A: One full 1 gallon storage container of waste Xylene.
Ref: 10 CSR 25-5.262(1)3.B; 40 CFR 262.34(d)(4) referencing 40 CFR 262.34(a)(2)

Completion Date: 5/5/2011

1) Actions Taken to Correct Violation:

- Placed label on storage container that list the date of accumulation and marks the container as "Hazardous Waste" (tab 29)
- Changed Policy to reflect new procedures (tab 15)
- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste (tab 19)

2) Changes in Procedure: Change made to Lab Policy and Procedure; policy # HS-Lab 4.0 to reflect changes in procedure (tab 15)

3) Reference Material: All items both cited above and referenced in the creation of citation 3 response, are found in tabs 15, 19, and 29 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 4: Hazardous waste storage container not marked "Hazardous Waste".

Part A: Same container in citation #3.

Ref: 10 CSR 25-5.262(1); 40 CFR 262.34(d)(4) referencing 40 CFR 262.34(a)(3)

Completion Date: 5/5/2011

1) Actions Taken to Correct Violation:

- Placed label on storage container that list the date of accumulation and marks the container as "Hazardous Waste" (tab 29)
- Changed Policy to reflect new procedures (tab 15)
- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste (tab 19)

2) Changes in Procedure: Change made to Lab Policy and Procedure; policy # HS-Lab 4.0 to reflect changes in procedure (tab 15).

3) Reference Material: All items both cited above and referenced in the creation of citation 4 response, are found in tab 15, 19, and 29 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 5: Weekly hazardous waste inspections (storage containers) were not maintained from 09/20/2010 to present.
Ref: 10 CSR 25-5.262(2)2.c(I)&(II); 40 CFR 265.174

Completion Date: 5/6/2011

1) Actions Taken to Correct Violation:

- Changed Policy to reflect new procedures (tab 15)
- Reestablished documented daily inspections of hazardous waste storage area (tab 17)
- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste. This training includes inspection requirements (tab 19)
- Inspection log posted inside hazardous waste storage cabinet (tab 29)
    - Records to be maintained in Lab Director's office

2) Changes in Procedure: Change made to Lab Policy and Procedure; policy # HS-Lab 4.0 to reflect changes in procedure. Multiple lab associates available 365 days per year trained to conduct inspections (tab 19).

3) Reference Material: All items both cited above and referenced in the creation of citation 5 response, are found in tab 15, 17, 19, and 29 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 6: Daily inspections (spills, handling, etc.) of the hazardous waste storage area not conducted.
Ref: 10 CSR 25-5.262(2)2.c(II)

Completion Date: 5/6/2011

1) Actions Taken to Correct Violation:

- Changed Policy to reflect new procedures (tab 15)
- Reestablished documented daily inspections of hazardous waste storage area (tab 17)
- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste. This training includes inspection requirements (tab 19)
- Inspection log posted inside hazardous waste storage cabinet (tab 29)
    - Records to be maintained in Lab Director's office

2) Changes in Procedure: Change made to Lab Policy and Procedure; policy # HS-Lab 4.0 to reflect changes in procedure. Multiple lab associates available 365 days per year trained to conduct inspections (tab 19).

3) Reference Material: All items both cited above and referenced in the creation of citation 6 response, are found in tab 15, 17, 19, and 29 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 7: The length of time of universal waste accumulation not demonstrated.
Part A: Five boxes of spent fluorescent lamps (at least 178 spent lamps).
Ref: 10 CSR 25-16.273(1) referencing 40 CFR 273.15(c)

Completion Date: 5/5/2011

1) Actions Taken to Correct Violation (tabs 23 & 24):

- Marked storage container with date first spent lamp was accumulated (tab 28)
- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste. This training includes handling, spill clean-up, labeling, and storage (tabs 20, 21, and 22) of universal waste.

2) Changes in Procedure: Universal waste will be store in accordance with both 10 CSR 25-16.273(1) and 40 CFR 273.15(c). Universal waste will be stored in a closed container label "Universal Waste" and dated to reflect the start of accumulation (tab 28). All effected associates will receive training on proper handling procedures for universal waste during employee orientation.

3) Reference Material: All items both cited above and referenced in the creation of citation 7 response, are found in tabs 20-24, and 28 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 8: Employees not trained regarding proper management of universal waste (lamps).
Ref: 10 CSR 25-16.273(1) referencing 40 CFR 273.16

Completion Date: 5/12/2011

1) Actions Taken to Correct Violation (tabs 23 & 24):

- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste. This training includes handling, spill clean-up, labeling, and storage (tabs 20, 21, and 22) of universal waste.

2) Changes in Procedure: Universal waste will be store in accordance with both 10 CSR 25-16.273(1) and 40 CFR 273.15(c). Universal waste will be stored in a closed container label "Universal Waste" and dated to reflect the start of accumulation (tab 28). All effected associates will receive training on proper handling procedures for universal waste during employee orientation.

3) Reference Material: All items both cited above and referenced in the creation of citation 8 response, are found in tabs 20-24, and 28 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 9: Universal waste (lamps) not stored in a closed container.
Part A: Same containers listed in citation #7.
Ref: 10 CSR 25-16.273(1) referencing 40 CFR 273.13(d)(1)

Completion Date: 5/5/2011

1) Actions Taken to Correct Violation (tabs 23 & 24):

- Storage container sealed. Universal waste-lamps storage containers will remain sealed except to add spent lamps.
- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste. This training includes handling, spill clean-up, labeling, and storage (tabs 20, 21, and 22) of universal waste.

2) Changes in Procedure: Universal waste will be store in accordance with both 10 CSR 25-16.273(1) and 40 CFR 273.15(c). Universal waste will be stored in a closed container label "Universal Waste" and dated to reflect the start of accumulation (tab 28). All effected associates will receive training on proper handling procedures for universal waste during employee orientation.

3) Reference Material: All items both cited above and referenced in the creation of citation 9 response, are found in tabs 20-24, and 28 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

Citation 10: Universal waste (lamps) not labeled as "Universal Waste-Lamps," "Waste Lamps," or "Used Lamps."
Ref: 10 CSR 25-16.273(1) referencing 40 CFR 273.14(e)

Completion Date: 5/5/2011

1) Actions Taken to Correct Violation (tabs 23 & 24):

- Marked storage container "Waste Lamps" and marked storage area "Universal Waste".
- Conducted employee training to educate lab staff on correct handling and storage of hazardous waste. This training includes handling, spill clean-up, labeling, and storage (tabs 20, 21, and 22) of universal waste.

2) Changes in Procedure: Universal waste will be store in accordance with both 10 CSR 25-16.273(1) and 40 CFR 273.15(c). Universal waste will be stored in a closed container label "Universal Waste" and dated to reflect the start of accumulation (tab 28). All effected associates will receive training on proper handling procedures for universal waste during employee orientation.

3) Reference Material: All items both cited above and referenced in the creation of citation 10 response, are found in tabs 20-24, and 28 of this report.

4) Contact information for all persons consulted in the preparation of this response listed on the Contact Sheet following the table of contents.

PHARMACEUTICAL WASTE STREAMS

Approximately eight percent of medication disposal is RCRA hazardous waste. However, to simplify segregation for the nursing staff, Mercy has contracted to handle all waste medications as RCRA hazardous. Still, this is complex due to the categorization within the EPA Hazardous waste regulations. There are nine types of waste streams through which pharmaceutical wastes and unwanted or unusable drugs leave the hospital. These waste streams include: regular trash, sewer disposal, chemo-waste (YELLOW hard and soft), hazardous waste (Black), regulated biomedical waste (RED hard for sharps and soft), and reverse distribution through the pharmacy. The nine waste streams are described in greater detail below.

Waste Streams	Description	Examples
Regular Trash	Non-hazardous wastes that have not been in contact with hazardous medications. This includes paper and plastic.	• Oral solid drug packaging (except p-listed) • Empty IV bags (must contain less than 3% of original volume!) with exception of chemo • Non Chemo IV tubing
Solutions allowed for Sewer disposal	Partial contents of Plain IV Solution bags, i.e. containing Salts, Lipids, Amino Acids, but no further medications. Ironically, remaining contents of controlled substances are to be wasted to the sewer and not to black containers. (REGULATIONS)	• Stock IV Solutions (D5W, LR, NS, etc) • PPN's containing electrolytes only, vitamins and trace only • Controlled substance waste which cannot be returned to pharmacy (partial vial etc)
Chemo Waste **"Yellow Hard Container w Lid"**	Materials that were used to prepare or administer chemotherapy drugs.	• Empty syringes vials and needles used in Chemo drug preparation and administration. (this is after discarding contents into black container.)
Chemo Waste **"Yellow bag"**	Materials that were used to prepare or administer chemotherapy drugs.	• Empty chemo IV bags and chemo IV tubing (this is after discarding contents into black container.) • Gowns, gloves, masks used with chemo.
U - Listed Hazardous Waste **Black Container with Lid**	All non-controlled substance waste medications, including oral solid, partial contents of vials or syringes, and partial contents of medication containing IV solutions may be squirted into the black pharmaceutical waste container, prior to disposal in sharps or other appropriate container. Because Mercy has simplified the discernment between hazardous and non-hazardous medications, all non controlled waste medications may also be disposed of in this category.	**Pharmaceutical waste (non cont. sub.)** • All Oral solid (tablet capsule) waste • Oral liquids • Partial contents of ***medication*** containing IV solutions (including IVPB) • Contents of partially used non–controlled substance vials and syringes • Partial contents of ***chemo*** containing IV solutions, vials and syringes • TPN w/ selenium chromium • Inhalers
P listed (acutely hazardous) waste **Separate Black container**	P - listed waste must be kept separate from other hazardous (U - listed) waste. Special container to be maintained in the med room.	**P listed (acutely hazardous) only** • Warfarin & unit dose packaging • Nicotine patch & wrapper • Physostigmine tab or inj. + container
Sharps **"Red Sharps Container"**	Sharps waste that may contain infectious pathogens which may cause disease in humans. • (NOTE: sharps used to prepare/administer chemo are discarded in yellow hard plastic container.)	• Needles and syringes used in administration of drugs, except chemo. • Empty vials, ampoules and syringes, except chemo • Scalpels / lancets
Biomedical Waste **"Red Bag"**	Potentially infectious soft waste.	
Send to Pharmacy. **(Reverse Distributor)**	Unopened medications both Controlled Substance and non-Controlled substances which are returned to pharmacy for patient credit and potential re-use or return to the manufacturer for credit.	• Controlled Substances expired, or otherwise, which have not been opened or administered to patient. • Medications to be returned to manufacturer for credit, expired or over-stock.

Pharmaceutical Waste Management Timeline and Responsibilities

Task	Action Owner	Pre Week 1	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Hospital employee notification, inform departments of upcoming walk through and process	Hospital	X						
What Rx waste will be gathered? All, subset?	Hospital	X						
Pilot or No Pilot Decision	Hospital	X						
Training decision (Outsourced or not)	Hospital	X						
Training decision if outsourced (Train all or Train the Trainer)	Hospital	X						
Container Placement Outsourced?	Hospital	X						
Management of Full/Empty Containers (Outsourced or managed internally)	Hospital	X						
Signed Legal Document	Mutual	X						
Agreed upon pricing	Mutual	X						
Hospital Maps, Supply to Clean Harbors	Hospital	X						
Containers Chosen (BD or Covidien)	Hospital	X						
Container Provider Direct from manufacturer or supplier?)	Hospital	X						
Formulary Review Required?	Hospital	X	X					
Walk though of hospital (including patient care, labs, OR, ED, NICU, Microbiology)	Mutual		X					
Containers Ordered	Hospital or Clean Harbors		X					
Training Date set	Hospital or Mutual		X					
SOP Development	Hospital or Mutual		X	X				
Training documents approved	Mutual			X				
Container Placement Date set	Hospital or Mutual			X				
Generator ID obtained, if necessary	Clean Harbors			X				
Verify State Manifest requirements	Clean Harbors			X				
Complete Profiles	Clean Harbors			X				
Create inspection log	Clean Harbors			X				
Main Storage area requirements set and agreed upon	Mutual			X				
Training Executed	Mutual			X				
Install Satellite Containers, Signs and Documentation	Clean Harbors				X			
Set up Main Storage Accumulation Area	Clean Harbors				X			
Rollout to off site locations	Hospital				X			
Waste Placed by Hospital staff into containers	Hospital				X	X		
Ongoing feedback/improvement	Clean Harbors					X	X	X
First off site shipment	Clean Harbors							X
Review first 2 weeks	Mutual							X

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St Johns Joplin
2727 McCLELLAND BLVD

Purchase Order	
PO#	Issue Date
1017042710	03/31/11

Supplier	Bill To	Ship To
Env Services Inc. P.O. BOX13700-1145 PHILADELPHIA PA 19191-1145 Phone: (800)345-6094	Sisters of Mercy Health Systems SSAP - 108331 PO Box 10426 Springfield, MO 65808 Customer #:	St. Johns - Joplin Attn: Clinical Engineering 2727 McClelland Blvd Joplin, MO 64804 Customer #:

Buyer	Ship Via	Ship Date	Terms
Parmley Clark D		03/31/11	

Line	Part #	Description	Supplier Part #	Cost Center	U/C	Unit Price	Qty.	Extended
1		PM Fume Hood 34509		Clinical Engineering	ea./1.00	350.00000	1.00	350.00
2		PM Fume Hood 34511		Clinical Engineering	ea./1.00	350.00000	1.00	350.00
3		PM Fume Hood 36523		Clinical Engineering	ea./1.00	350.00000	1.00	350.00
4		Travel		Clinical Engineering	ea./1.00	540.00000	1.00	540.00
5		PM Fume Hood 19831		Clinical Engineering	ea./1.00	185.00000	1.00	185.00

Line Item Total	1775.00
Shipping & Handling Total	0.00
Tax Total	0.00
Grand Total	1775.00

Note:
8199238/Zorn, 8199239/Zorn, 8199240/Zorn,
8199241/Zorn

VEOLIA ENVIRONMENTAL SERVICES

Waste Generation & Management

Criteria **Date Shipped:** 07/01/2009 to 06/30/2010 **Report Type:** Hazardous Waste Only
Generators: 553529, 552589

Generator: ST. JOHNS REGIONAL MEDICAL CTR (552589) **EPA ID:** MOD076262500
Address: (ATTN: KEVIN FITZPATRICK) 2727 MCCLELLAND BOULEVARD, JOPLIN, MO 64804

Source: G08 - Rmvl spent proc.lqd./catalysts **Form:** W219 - Other organic lqd (specify com **Mgmt Method:** H040 - Incineration-thermal destruct.

Ship Date	Manifest #	Pg	Ln	# Ctr	Units	UOM	Lbs	WIP	Waste Name	Facility EPA ID	Transporters
05/06/2010	000388171VES	1	1	7	25	Pounds	175	956826	HISTOLOGY XYLENE FOR PTA	TXD000838896	NJD080631369 OKD981588791 NJD080631369
Total:				7			175				

US EPA Codes: D001 F003
State EPA Codes:

Source: G09 - Other prod. or serv. process **Form:** W409 - Other organic solids (specify **Mgmt Method:** H040 - Incineration-thermal destruct.

Ship Date	Manifest #	Pg	Ln	# Ctr	Units	UOM	Lbs	WIP	Waste Name	Facility EPA ID	Transporters
05/13/2010	000542734VES	2	2	9	240	Pounds	2,160	129248	CHEMOTHERAPY GELS AND PRE	TXD000838896	NJD080631369 OKD981588791 NJD080631369
Total:				9			2,160				

US EPA Codes: U010
State EPA Codes:

Source: G11 - Disc.off-spec/out-of-date chem **Form:** W001 - Lab packs with no acute haz. **Mgmt Method:** H141 - Store,bulk,transfer off-site

Ship Date	Manifest #	Pg	Ln	# Ctr	Units	UOM	Lbs	WIP	Waste Name	Facility EPA ID	Transporters
06/24/2010	000460722VES	1	1	1	10	Pounds	10	43816	LABPACKS	WID003867148	NJD080631369

Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Comply™1322 and 1355 Lead Free Indicator Tape for Steam Sterilization
MANUFACTURER: 3M
DIVISION: Infection Prevention Division

ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 05/05/11
Supercedes Date: 04/05/11

Document Group: 26-5639-5

Product Use:
Intended Use: To hold packs and indicate conditions for steam sterilization

SECTION 2: INGREDIENTS

Ingredient	C.A.S. No.	% by Wt
Paper	None	30 - 40
Acrylate Copolymer	None	20 - 30
POLYISOPRENE	9003-31-0	18 - 28
BUTYLATED UREA-FORMALDEHYDE RESIN	68002-19-7	1 - 8
ZINC OXIDE	1314-13-2	1 - 3
TITANIUM DIOXIDE	13463-67-7	1 - 2

Blue dye is present on the 1355 tape.

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Printed paper on tape, white, beige or blue.
General Physical Form: Solid
Immediate health, physical, and environmental hazards: The environmental properties of this product present a low environmental hazard. Contains a chemical or chemicals which can cause birth defects or other reproductive harm. This product contains latex or natural dry rubber.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
Mild Eye Irritation: Signs/symptoms may include redness, pain, and tearing.

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, and itching.

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

Ingestion:
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Ingredient	C.A.S. No.	Class Description	Regulation
TITANIUM DIOXIDE	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

This substance does not leach metals or other RCRA (Resource Conservation and Recovery Act) listed TCLP (Toxic Characteristic Leaching Procedure) hazardous substances at concentrations that would make the product a hazardous waste.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.
Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.
Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.
If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	*No Data Available*
Flash Point	*Not Applicable*
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*

5.2 EXTINGUISHING MEDIA
Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Not applicable.

6.2. Environmental precautions
Not applicable.

Clean-up methods
Not applicable.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Avoid prolonged or repeated skin contact. This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2 STORAGE
Not applicable.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Not applicable.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact.

8.2.2 Skin Protection
Avoid prolonged or repeated skin contact. Avoid skin contact with hot material. Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials. Wear heat insulating gloves when handling this material to prevent thermal burns.

8.2.3 Respiratory Protection
Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing
Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

Ingredient	Authority	Type	Limit	Additional Information
Paper	ACGIH	TWA	10 mg/m3	
Paper	OSHA	TWA, respirable fraction	5 mg/m3	
Paper	OSHA	TWA, as total dust	15 mg/m3	
TITANIUM DIOXIDE	ACGIH	TWA	10 mg/m3	
TITANIUM DIOXIDE	CMRG	TWA, as respirable dust	5 mg/m3	
TITANIUM DIOXIDE	OSHA	TWA, as total dust	15 mg/m3	
ZINC OXIDE	ACGIH	TWA, respirable fraction	2 mg/m3	
ZINC OXIDE	ACGIH	STEL, respirable fraction	10 mg/m3	
ZINC OXIDE	OSHA	TWA, as fume	5 mg/m3	
ZINC OXIDE	OSHA	TWA, respirable fraction	5 mg/m3	
ZINC OXIDE	OSHA	TWA, as total dust	15 mg/m3	

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	Printed paper on tape, white, beige or blue.
General Physical Form:	Solid
Autoignition temperature	*No Data Available*
Flash Point	*Not Applicable*
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Boiling Point	*No Data Available*
Density	*Not Applicable*
Vapor Density	*Not Applicable*
Vapor Pressure	*Not Applicable*
Specific Gravity	*Not Applicable*

pH	*Not Applicable*
Melting point	*Not Applicable*
Solubility In Water	*Not Applicable*
Evaporation rate	*Not Applicable*
Kow - Oct/Water partition coef	*Not Applicable*
Percent volatile	*Not Applicable*
Viscosity	*Not Applicable*

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
None known

10.2 Materials to avoid
None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance	Condition
Formaldehyde	At Elevated Temperatures
Carbon monoxide	Oxidation, heat or reaction
Carbon dioxide	Oxidation, heat or reaction

Hazardous Decomposition: Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.
Formaldehyde (CAS# 50-00-0)-This tape contains a formaldehyde based resin. It is known that these resins may decompose under elevated temperatures and can potentially generate formaldehyde. While sampling inside a steam autoclave indicated small amounts of formaldehyde could be generated during a sterilization cycle, no exposure to gaseous formaldehyde is expected at normal room temperature. At temperatures greater than 30° Celcius, estimated concentrations of formaldehyde in air during packing and off-gassing were calculated to be below 0.1 ppm. Since workplaces can vary, an exposure assessment should be conducted if the need to confirm these results for a specific workplace is identified.

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of waste product in a sanitary landfill. As a disposal alternative, incinerate in an industrial or commercial facility.

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14:TRANSPORT INFORMATION

ID Number(s):
CT-0609-0754-1, CT-0609-0755-8, CT-0609-0756-6, CT-0609-0757-4, CT-0609-0758-2, CT-0609-0759-0, CT-0609-2026-2, CT-0609-2027-0, CT-0609-2028-8

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS
Contact 3M for more information.

311/312 Hazard Categories:
Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
ZINC OXIDE (ZINC COMPOUNDS)	1314-13-2	1 - 3

STATE REGULATIONS
Contact 3M for more information.

CHEMICAL INVENTORIES
This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

Contact 3M for more information.

INTERNATIONAL REGULATIONS
Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification
Health: 1 **Flammability:** 1 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes:
Section 2: Ingredient table was modified.
Section 8: Hand protection information was modified.
Section 3: Carcinogenicity table was added.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

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3M USA MSDSs are available at www.3M.com

3M Health Care Business

3M Center
St. Paul, MN 55144-1000
651 733 1110

May 12, 2011

Dear Valued Customer:

Per your request, this letter discusses the issue of the lead content of the 3M™ Chemical Indicator Products:

3M™ Comply™ 1222 and 1255 Indicator Tape
3M™ Comply™ 1250, 00107/00107A, 00109/00109A Internal Chemical Indicator Strips
3M™ Comply™ 1252 Load Cards/Steam
3M™ Comply™ 67200 and 67201 Sterilizer Record Cards
3M™ Comply™ 13911, 13912 and 13915 Instrument Protectors
3M™ Comply™ 1233 and 00135 Bowie-Dick Type Test Pack
3M™ Comply™ and 00130 Bowie-Dick Test Sheet
3M™ Comply™ 41360 Steam Chemical Integrator Test Pack (label on test pack)
3M™ Attest™ 1276/1276F Steam Pack (internal chemical indicator and label on test pack)
3M™ Attest™ 41380 Steam Plus Pack (label on test pack)
3M™ Attest™ 1296 Rapid Readout Steam Pack (internal chemical indicator and label on test pack)
3M™ Attest™ 41382 Rapid 5 Steam Plus Test Pack (label on test pack)

3M chemical indicators not listed, such as 3M™ Comply™ 1243 (formerly SteriGage™) Steam Chemical Integrators, do not contain lead.

According to the literature, inorganic lead is absorbed through the gastrointestinal tract (ingestion) and respiratory channels (lungs). Inorganic lead is not directly absorbed through the skin. That is why lead is not listed as a non-infectious hazard source for health care employees in the *CDC/NIOSH Guidelines for Protecting the Safety and Health of Health Care Workers* or the *OSHA Technical Manual.*[1] In addition there are no world regulatory bodies that have established exposure limits for dermal exposure to inorganic lead.[2]

The 3M chemical indicators contain < 4% (by weight) of a water insoluble inorganic lead compound (i.e., lead carbonate). The color change that occurs during steam sterilization (from white to black) depends on the conversion of lead carbonate to lead sulfide. These chemical indicator inks are generally coated with a protective sealant, which reduces surface exposure potential.

The National Institute for Occupational Safety and Health (NIOSH) conducted several types of tests in a hospital setting on lead containing sterilization monitoring products based on the known fact that lead can be absorbed into the body by ingestion or inhalation.[3] The following tests were conducted:

- personal breathing air zone samples
- stationary air samples
- surface wipe samples (wiping surfaces such as table tops, autoclave door handles, and hands with filter paper)
- placing filters in Bowie-Dick type test packs and analyzing them to detect if lead volatilized from the test sheet
- analyzing blood of personnel for lead as well as free-erythrocyte protoporphyrin, indicators of lead exposure.

In the NIOSH study, wipe samples taken of surfaces directly or indirectly contacted by lead-containing indicators, including worker's fingers showed no detectable lead (<2 μg), with the exception of one sample taken from the autoclave rack track, which contained 12 μg lead.[3] These results show that indicators do not cause generalized contamination of work surfaces or worker's hands via direct or incidental contact.

Lead analysis of passive filter samples placed on and within sterilization packs showed low levels of lead (<10 μg) in samples in direct contact with the indicators and no detectable lead inside the surgical packs (<0.9 μg).[4] In addition, wipe samples of surgical implements showed no detectable lead. Thus, lead contamination of instruments within surgical packs is considered to be negligible. Vaporization of lead or lead compounds from chemical indicator strips was not detected.

Personal breathing zone and general air samples from health care workers handling lead-containing steam sterilization indicators had no detectable lead (<1.6 $\mu g/m^3$).[3] The ACGIH TWA for occupational exposure to lead is 50 $\mu g/m^3$. During routine handling of chemical indicators, lead exposure via inhalation is negligible.

The NIOSH report states "Based on the environmental and medical sampling results, lead exposure of SPD (Supply, Processing, and Distribution) processing technicians is negligible during routine use of Surgicot™ steam sterilization strips and tape, and Tomac™ test records."

The Central Research Labs at 3M also conducted testing and determined that 3M™ Comply™ 1222 Steam Indicator Tape and 3M™ Comply™ (Incheque™)1201 Steam Chemical Indicator Rolls contain comparable amounts of lead to that reported by

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NIOSH for Surgicot tape and strips (Surgicot products are now marketed by the Steris™ Corporation). Central Research Lab test results indicate that no lead volatilized from Comply 1222 indicator tape or Comply 1201 chemical indicators during steam sterilizing.

In conclusion, lead hazards from worker contact with lead-containing chemical indicators appears to be negligible when these products are used as intended. Recommendations to further reduce potential skin contact of lead-containing chemical indicators includes washing hands following contact and before eating, and wearing gloves if skin is not intact. I hope this information is of help. Please contact us if you have additional questions.

Sincerely:

Michael J. Walt
Clinical Research Associate
Medical Products Laboratory
0270-04-N-01
St. Paul, MN 55144-1000

References:

1. **Guideline for Protecting the Safety and Health of Health Care Workers, Section 5, potential non-infectious hazard sources for employees.**
http://www.cdc.gov/niosh/hcwold0.html.
2. **Toxicological Profile for Lead (Update)**, ATSDR, U.S. Department of Health and Human Services. ,July, 1999.
3. **NIOSH Health Hazard Evaluation Report.** U.S. Dept. of Health and Human Services, St. Francis-St. George Hospital, Cincinnati, HETA 87-339-1863, January, 1988.

3M Health Care Business

3M Center
St. Paul, MN 55144-1000
651 733 1110

May 28, 2009

Dear Valued Customer:

I am writing in response to your questions about the lead and/or latex content of the 3M™ Comply™ 1222 Steam Indicator Tape and 3M™ Comply™ 1255 Steam Indicator Tape for Disposable Wraps.

3M™ Comply™ 1222 Steam Indicator Tape and 3M™ Comply™ 1255 Steam Indicator Tape for Disposable Wraps.

The Comply 1222 and 1255 steam indicator tapes contain both lead and latex. The lead is included as a component of the color development system that monitors process conformance to effective sterilization conditions. The latex comes from the rubber latex based adhesive used to reliably adhere and secure the sterilization packs.

Lead is recognized as a hazardous substance by the EPA. The Material Safety Data Sheet (MSDS) included outlines specific disposal considerations to address this condition.

> **Section 13: Disposal Considerations**
>
> **Waste Disposal Method: Dispose of waste consisting of only post-sterilization tape material in a permitted hazardous waste facility.**
>
> **Additional Information: Dispose as appropriate for your waste stream in accordance with local, state and federal regulations.**
>
> **EPA Hazardous Waste Number (RCRA): D008 (Lead)**

The Comply 1222 tape was tested [Toxic Chemical Leaching Protocol (TCLP)] as a singular waste stream using only post-sterilization tape samples as the solid waste. The data collected showed values above the EPA limit for lead, consistent with the D008 hazard classification. This designation, however, may not be representative of the actual hospital waste stream. If the tape is disposed of along with the packaging material, drapes and other paper products used in surgery, then the actual weight percent of lead is reduced and the waste may comply with the EPA standard and not be considered hazardous requiring special disposal.

Each facility must assess its own individual waste stream profile and develop appropriate disposal procedures consistent with local, state and federal regulations. The EPA regulation for hazardous waste disposal is described in 40 CFR 261.24. (This

3M Health Care Business

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St. Paul, MN 55144-1000
651 733 1110

regulation document is available on-line at www.EPA.gov if you don't have a published copy of it.)

The MSDS information and data does not reflect the hospital waste stream but only the individual product described. Since the TCLP value for the product only is above the EPA limit, the D008 hazard classification described in the MSDS is used. The TCLP value for the hospital waste stream may be different than that determined for the individual product.

This same information about the waste stream would apply to any 3M product that contains lead.

We hope this information if of help. Please contact us if you have future questions or needs. Thank you so much for using 3M products.

Sincerely,

Barbara C. Swenson
Regulatory Affairs
3M Infection Prevention Division
3M Center, Bldg 275-05-W-06
St. Paul, MN 55144-1000
Tel: 651-736-1964; Fax: 651-737-5320
Email: bcswenson@mmm.com

Sandra Velte
Technical Service Representative
3M Infection Prevention Division
3M Center, Bldg 270-04-N-01
St. Paul, MN 55144-1000
Tel: 651-575-0932, Fax: 651-736-7329
Email: svelte@mmm.com

EPA1222.doc

3M Health Care Business

3M Center
St. Paul, MN 55144-1000
651 733 1110

May 28, 2009

Dear Valued Customer:

The management and control of waste derived from the use of disposal wraps secured with either 3M™ Comply™ 1222 Indicator Tape for Steam Sterilization or 1255 Steam Indicator Tape for Disposable Wraps, both containing lead, must meet EPA regulatory requirements for environmental exposure. Specifically, the disposal of such solid waste must comply with the Toxic Chemical Leaching Procedure (TCLP) limits. 3M has acquired limited data on the results of such testing that may be useful to you.

The data was generated using Kimberly-Clark (KC) KIMGUARD™ One-Step square wraps of several dimensions. The size and amount of tape used with each wrapper is listed below.

Wrapper Size	Amount of Tape
24 X 24 (Cat. No. 62224)	2 pieces, 8 inches by ¾ inch
36 X 36 (Cat. No. 62236)	2 pieces, 12 inches by ¾ inch
45 X 45 (Cat. No. 62245)	2 pieces, 15 inches by ¾ inch
54 X 54 (Cat. No. 62254)	2 pieces, 14 inches by ¾ inch

The TCLP results ranged from a high of 4.7 mg/L (milligram/liter) to a low of 1.6 mg/L with most measurements in the nominal range of 2-3 mg/L. The EPA limit for hazardous declaration is anything above 5.0 mg/L for lead. Controls on the wrap-only showed no contribution from the wrap source. (The sample size was limited and while reliable and consistent with expectations, it was not large enough to be represented statistically.)

From these results, which are admittedly unique to the particular situation tested, we conclude that when the indicator tape is used in a standard steam sterilization process with disposable wraps and disposed collectively as a waste unit, the waste will comply with the EPA guideline and is not hazardous for lead. If this waste unit is, however, sorted for the indicator tape, that waste is hazardous as described in the MSDS.

If you have follow up questions on this information please contact me or your local 3M sales representative

Sincerely,

Barbara C. Swenson
Regulatory Affairs
3M Infection Prevention Division
3M Center, Bldg 275-05-W-06
St. Paul, MN 55144-1000
Tel: 651-736-1964; Fax: 651-737-5320
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Sandra Velte
Technical Service Representative
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Tel: 651-575-0932, Fax: 651-736-7329
Email: svelte@mmm.com

3M Infection Prevention Solutions

3M™ Comply™ Lead Free Indicator Tape for Steam Sterilization

Simple Reliable Lead-Free

The industry standard for exposure monitoring. Now lead-free!

- Shows at a glance whether packs have been exposed to a steam sterilization process
- Accepts hand-writing and labeling
- Does not require hazardous waste disposal

Pb

Seals securely

3M Infection Prevention Solutions

Innovation On A Mission

3M

New lead-free construction – same trusted adhesive performance

The simple, convenient, sustainable way to check packs for sterilization exposure

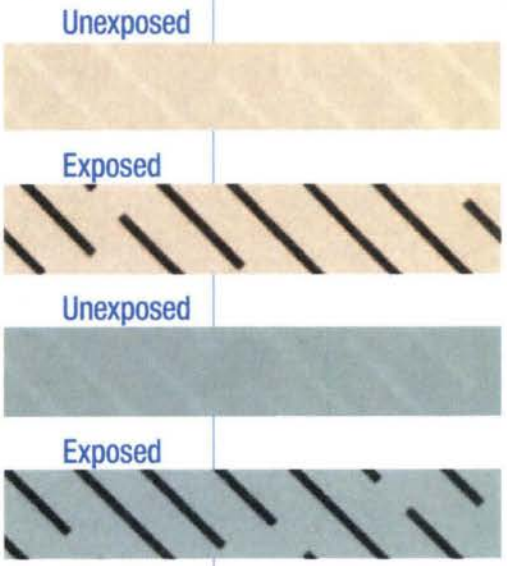
3M™ Comply™ Steam Indicator Tapes are external chemical indicators used to securely seal the wrapping on instrument packs. They provide the sterilizer operator with visual assurance that each package has been exposed to the sterilization process, without having to open the pack.

Available in two adhesive types – one for all wraps, another specifically for disposable wraps – Comply Steam Indicator Tapes feature a stretchable backing that minimizes tape "pop-off" during sterilization. And they can be written on or labeled with pre-printed labels, such as 3M™ Comply™ Sterilization Load Labels.

Healthcare facilities around the world have relied on these easy-to-use, economical indicator tapes for more than 60 years. Now, thanks to our new lead-free construction, you can enjoy that same level of trusted performance – without the hassles and expense of managing and disposing potentially hazardous waste.

3M™ Comply™ 1322 Steam Indicator Tape is designed for use on all wraps. Provides a secure seal and is easy to remove from reusable wraps.

3M™ Comply™ 1355 Steam Indicator Tape is specifically designed for use with disposable wraps. It features an aggressive adhesive to secure packs during and after processing.



The chemical indicator ink, printed in a diagonal striped pattern, changes color or turns darker when exposed to steam.

Simplify operations, avoid non-compliance

Lead is considered a "hazardous waste" under the Federal Resource, Conservation & Recovery Act (RCRA), which is the basis of U.S. EPA regulations for hazardous waste.

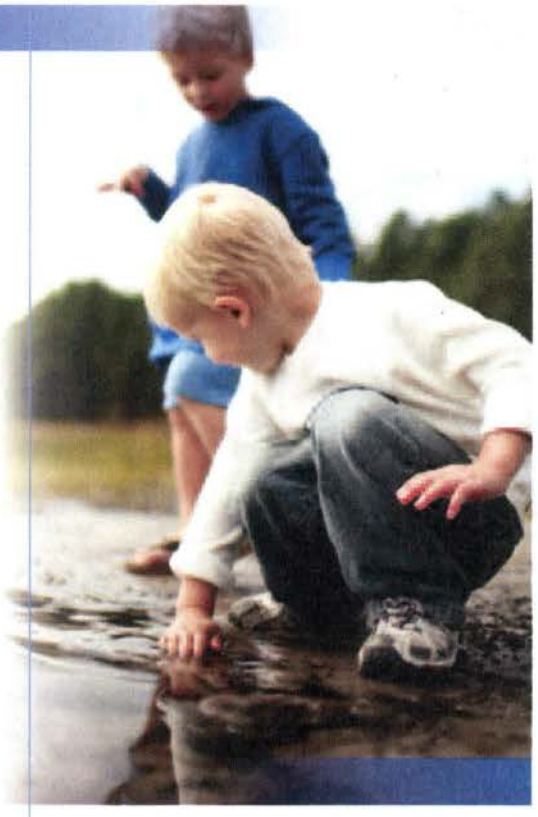
Congress has authorized the states to carry out many of the functions of RCRA through their own hazardous waste programs. Most state laws and regulations are at least as stringent as the federal rules and are often even tougher. For example, nineteen U.S. states now prohibit the sale or distribution of packaging that intentionally contains lead or other toxic metals. The purpose of these laws is to prevent the use of toxic heavy metals that enter landfills, waste incinerators, recycling streams, and ultimately, the environment.

Hospitals can incur heavy fines and penalties for RCRA violations, including failure to make a hazardous waste determination, improper disposal, improper hazardous waste labeling and lack of personnel training. Each facility must assess its own individual waste stream profile and develop appropriate disposal procedures consistent with local, state and federal regulations. The EPA regulation for hazardous waste disposal is described in the Code of Federal Regulations document, 40 CFR 261.24.

The problem is, hospitals are full of products that could be considered hazardous waste once they are thrown away – and often you might never even know that a product contains a regulated material until you are cited for a violation. For example, lead has been used for decades as an ingredient in the specialized inks used in the manufacture of hospital sterilizer indicator/autoclave tapes and cards. When discarded, these can be considered toxic hazardous wastes, depending on the amount and concentration of lead that is disposed of at any given time.

Determining the amount of lead waste generated by the use of these products, and how properly to dispose of it, can be very a complex and costly process. For example, lead-containing autoclave tape attached to packages wrapped in hospital "blue wrap" might be considered hazardous waste, while the wrap itself would not. The amount of lead contained in a day's worth of discarded packages therefore would have to be calculated by first determining the average length of tape per square foot of wrap and then multiplying that by the concentration of lead in that length.

As concern about the long-term health effects of lead and other toxic metals continues to grow, it is almost certain that regulations on the use and disposal of lead-containing products will become increasingly restrictive, complex and costly for healthcare facilities to follow. That's why standardizing on lead-free products, such as 3M™ Comply™ Steam Indicator Tapes, make such good sense – by helping to simplify operations, avoid the risk of penalties for non-compliance, and enhancing your reputation for good environmental stewardship.



Why it is so important to "get the lead out."

Lead is a soft, dense, grayish metal that has been used for thousands of years in the manufacture of products ranging from plumbing pipes to cosmetics.

The problem with lead is that, in sufficient quantities, it is poisonous, and can cause a variety of serious health effects, including neurological damage, blindness, kidney failure – and can even lead to death. It is especially dangerous to young children.

Increasingly-stringent regulatory actions, such as the elimination of lead in gasoline and household paints, have reduced the amount of lead that reaches the environment; however, lead can still be found in a wide range of products, from fishing tackle and automobile wheel weights to car batteries. If improperly disposed of, lead from these products can leach into the air, water and soil – creating conditions that are potentially lethal to people and aquatic life.

Best Practices

- Use an external chemical indicator on the outside of each package
- If a package allows for visual inspection of an internal indicator (such as those with paper/plastic packaging), an external indicator is not required

Standardize to the Core

3M™ Comply™ Steam Indicator Tapes are one of the "Core Four" 3M sterilization products. By standardizing on the Core Four, and following AAMI and AORN recommended standards and practices, you can be confident that you are doing your best for your facility and its patients.

Ordering Information

Class 1: Conforms to ANSI/AAMII/ISO 11140-1:2005

Catalog Number	Product Name	Size	Rolls/ Intermediate	Rolls/Case
1322-12MM	3M™ Comply™ Lead Free Steam Indicator Tape (designed for use on all wraps)	0.47 in x 60 yd (12mm x 55m)	–	42
1322-18MM		0.70 in x 60 yd (18mm x 55m)	–	28
1322-24MM		0.94 in x 60 yd (24mm x 55m)	–	20
1322-48MM		1.89 in x 60 yd (48mm x 55m)	–	10
1355-18MM	3M™ Comply™ Lead Free Indicator Tape (designed for use on disposable wraps)	0.70 in x 60 yd (18mm x 55m)	–	28
1355-24MM		0.94 in x 60 yd (24mm x 55m)	–	20

Note: Contains dry natural rubber.

Indicator Tape Dispenser

Catalog Number	Product Name	Description	Items/Box	Boxes/Case
C22	Heavy Duty Tape Dispenser	Holds 2 rolls	1	2
M52	Heavy Duty Tape Dispenser	With Tabber	1	1

3M

Infection Prevention Division
3M Health Care
3M Center, Building 275-4W-02
St. Paul, MN 55144-1000
1-800-228-3957
www.3M.com/healthcare

Issued: 11/10 6960HB
70-2010-8188-5

kester
CONNECTING INNOVATION

Personal Protective Equipment	WHMIS Pictograms	DOT Pictograms
		Not Regulated
Safety Glasses, Protective Gloves	D2A Toxic	

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**Lead Solder Alloy**
Product Code:	Lead Solder Alloy
MSDS Manufacturer Number:	Lead Solder Alloy
Product Use/Restriction:	Solder
Manufacturer Name:	Kester
Address:	800 W. Thorndale Avenue Itasca, IL 60143
General Phone Number:	(630)-616-4000
Customer Service Phone Number:	(800)-2KESTER (253-7837)
CHEMTREC:	CHEMTREC 24-Hour Emergency Telephone Number: (800)424-9300 CHEMTREC 24-Hour Emergency Telephone Number: ((Outside of the U.S. and Canada):): (703)527-3887
Website:	msds@kester.com
MSDS Creation Date:	August 15, 2008
MSDS Revision Date:	March 11, 2010

NFPA

HMIS

Health Hazard	2*
Fire Hazard	0
Reactivity	0
Personal Protection	X

* Chronic Health Effects

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent	EC Num.
Antimony	7440-36-0	0 - 10 by weight	
Bismuth	7440-69-9	0 - 10 by weight	
Zinc	7440-66-6	0 - 10 by weight	
Copper	7440-50-8	0 - 10 by weight	
Lead	7439-92-1	0 - 100 by weight	
Tin	7440-31-5	0 - 100 by weight	
Silver	7440-22-4	0 - 10 by weight	

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview:	CAUTION! Irritant. Exposures to soldering fumes and vapors may be irritating to eyes, respiratory system, and skin.
Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Eye:	Smoke during soldering can cause eye irritation.
Skin:	May cause irritation.
Inhalation:	Prolonged or excessive inhalation may cause respiratory tract irritation.
Ingestion:	May be harmful if swallowed. May cause vomiting.
Chronic Health Effects:	Suspected of damaging fertility or the unborn child Repeated and prolonged exposure to lead and lead compounds may cause abdominal pain, diarrhea, loss of appetite, metallic taste, nausea, vomiting, lassitude, insomnia, muscle weakness, joint and muscle pain, irritability, headache and dizziness. Red blood cells may be damaged resulting in anemia. Gastritis and injury to the kidneys, liver, male gonads, and central nervous system may also occur.
Lead :	
Carcinogenicity:	IARC: Group 2B: Possibly carcinogenic to humans.

SECTION 4 - FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with plenty of water for 15 to 20 minutes. Get medical attention, if irritation or symptoms of overexposure persists.
Skin Contact:	Immediately wash skin with soap and plenty of water. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point:	> 93 °C (> 199 °F)
Lower Flammable/Explosive Limit:	Not applicable.
Upper Flammable/Explosive Limit:	Not applicable.
Extinguishing Media:	Use alcohol resistant foam, carbon dioxide, dry chemical, or water fog or spray when fighting fires involving this material.
Unsuitable Media:	Do not use a solid water stream as it may scatter and spread fire.
Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.
Hazardous Combustion Byproducts:	Oxides of carbon, oxides of nitrogen, aliphatic aldehydes, and other organic substances may be formed during combustion.. Melted solder above 1000 deg F will liberate toxic lead and/or antimony fumes

NFPA Ratings:

NFPA Health:	2
NFPA Flammability:	0
NFPA Reactivity:	0
NFPA Other:	

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personnel Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area. Avoid inhaling vapors, mists, or fumes. Avoid contact with skin, eyes and clothing.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.
Methods for containment:	Melted solder will solidify on cooling and can be scraped up.
Methods for cleanup:	Solidfied solder can be scraped up upon cooling. Use caution to avoid breathing fumes if a gas torch is used to cut up large pieces.

SECTION 7 - HANDLING and STORAGE

Handling:	Use with adequate ventilation. Avoid breathing vapor and fumes. Use only in accordance with directions.
Storage:	No special storage conditions required.
Hygiene Practices:	Wash thoroughly after handling. Avoid inhaling vapors, mists, or fumes.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Safety glasses with side-shields.
Hand Protection Description:	Wear appropriate protective gloves. Consult glove manufacturer's data for permeability data.
Respiratory Protection:	When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self- contained breathing apparatus should be worn.

EXPOSURE GUIDELINES

Antimony :	
Guideline ACGIH:	TLV-TWA: 0.5 mg/m3
Guideline OSHA:	PEL-TWA: 0.5 mg/m3
Copper :	
Guideline ACGIH:	TLV-TWA: 1 mg/m3
Guideline OSHA:	PEL-TWA: 1 mg/m3
Lead :	
Guideline ACGIH:	TLV-TWA: 0.05 mg/m3
Guideline OSHA:	PEL-TWA: 0.05 mg/m3
Tin :	

Guideline ACGIH:	TLV-TWA: 2 mg/m3
Guideline OSHA:	PEL-TWA: 2 mg/m3
Silver:	
Guideline ACGIH:	TLV-TWA: 0.1 mg/m3
Guideline OSHA:	PEL-TWA: 0.01 mg/m3

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Solid
Color:	Silver grey
Odor:	Odorless
Boiling Point:	Not determined.
Melting Point:	> 100 °C (> 212 deg F)
Density:	>7 g/cm³ (@ 20 °C (68 °F))
Flash Point:	> 93 °C (> 199 °F)

SECTION 10 - STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	No thermal decomposition if used according to specifications.
Incompatible Materials:	Oxidizing agents. Strong acids and alkalis.
Special Decomposition Products:	When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids.

SECTION 11 - TOXICOLOGICAL INFORMATION

Antimony:

Ingestion:	Oral - Rat LD50: 100 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

Bismuth:

Ingestion:	Oral - Mouse LD50: 10 gm/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Rat LD50: 5 gm/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

Zinc:

Skin:	Skin - Human Standard Draize Test. : 300 ug/3D-I - [mild](RTECS)
Inhalation:	Inhalation. - Human TCLo - Lowest published toxic concentration: 124 mg/m3/50M - [Lungs, Thorax, or Respiration - cough Lungs, Thorax, or Respiration - dyspnea Skin and Appendages - sweating] (RTECS)
Ingestion:	Oral - Bird duck LDLo: 388 mg/kg - [Autonomic Nervous System - other (direct) parasympathomimetic oral - ataxia Blood - changes in leukocyte (WBC) count] (RTECS)

Copper:

Ingestion:	Oral - Mouse LD50: 413 mg/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Mouse LD50: >5000 mg/kg [Behavioral - food intake (animal) Gastrointestinal - hypermotility, diarrhea Gastrointestinal - nausea or vomiting] (RTECS)

Silver:

Ingestion:	Oral - Mouse LD50: 100 mg/kg [Details of toxic effects not reported other than lethal dose value.] (RTECS)

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.

SECTION 14 - TRANSPORT INFORMATION

DOT Shipping Name:	Not Regulated.
DOT UN Number:	Not Regulated.
IATA Shipping Name:	Not Regulated.
IATA UN Number:	Not Regulated.
IMDG UN NUmber :	Not Regulated.
IMDG Shipping Name :	Not Regulated.
RID UN Number :	Not Regulated.

RID Shipping Name :	Not Regulated.

SECTION 15 - REGULATORY INFORMATION

Canada Reg. Status:	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.
Canada WHMIS:	Controlled - Class: D2A Very Toxic
Antimony :	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Bismuth :	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Zinc :	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Copper :	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Lead :	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Tin :	
TSCA Inventory Status:	Listed
Canada DSL:	Listed
Silver :	
TSCA Inventory Status:	Listed
Canada DSL:	Listed

WHMIS Pictograms

SECTION 16 - ADDITIONAL INFORMATION

General Use:	Solder
HMIS Health Hazard:	2*
HMIS Fire Hazard:	0
HMIS Reactivity:	0
HMIS Personal Protection:	X
MSDS Creation Date:	August 15, 2008
MSDS Revision Date:	March 11, 2010
Disclaimer:	The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibilty as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.

St. John's Regional Medical Center

Soldering Station Procedure

Mitigating Contamination While Using Lead Solder

Waste Management Regulations
40 CFR 261

Proud to be Mercy | St. Johns

Special Considerations

- **Most solder contains lead**
- **Once Discarded, lead is a U listed waste**
- **Any article used to clean soldering tools may become contaminated with lead**
  - This includes: rags, paper towels, sponges, etc.
  - Once discarded, the contaminated article could be hazardous waste

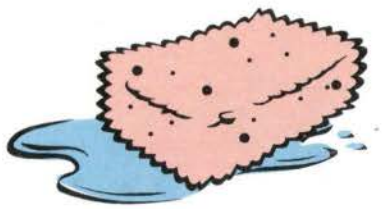
40 CFR 261.32(c)(3)

Management

Is your lead solder Hazardous Waste???

2 Ways to Determine:

1. **Analyze waste using the Toxicity Characteristic Leaching Procedure (TCLP)**
   - For lead the maximum threshold is 0.15 mg/l*
2. **Apply knowledge of the hazardous characteristic – Contact vendor/manufacturer for information**



* 40 CFR 261.32(C)(1)

Help reduce lead contaminated waste

- **While soldering, use only the sponge located at the soldering station**

  Why?

  - It can be reused almost indefinitely
  - While being used for its intended purpose the sponge is not considered waste*.

- Once discarded the sponge is hazardous waste

  - It must be disposed of through Veolia
  - Contact your supervisor to arrange the waste pickup through Environmental Services

*** EPA Pub001349**

Resources for More Information:

- **Missouri Statute Search –**

www.moga.mo.gov/statutesearch

- **Missouri Code of Regulations –**

www.sos.mo.gov

- **Code of Federal Regulations –**

www.gpoaccess.gov/cfr/index.html

MERCY
ST. JOHN'S
REGIONAL MEDICAL CENTER

2727 MCCLELLAND BOULEVARD ■ JOPLIN, MISSOURI 64804-1694
417-781-2727 ph

Meeting Sign-In Sheet

Project: Lead Soldering & Universal Waste Handling **Meeting Date:** May 12, 2011

Organizer: Safety & Security **Place/Room:** Clinical Engineering Dept.

Name	Dept	Emp. ID Number	Signature
1. Keith Zorn	CE	~~197184~~ 220799	
2. Calon Legge II	CE	220808	
3.	CE	220805	
4.	CE	220803	Randy Wansick
5. Jason W. Wade	CE	220802	
6. Gary Beaty	CE	220807	
7.			
8.			
9.			
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20.			

FLW

14

MISSOURI DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE PROGRAM

NOTIFICATION OF REGULATED WASTE ACTIVITY

COPY

All new and reactivating registrations require a $100 initial fee. Registrations without this fee will not be processed. The fee is not required if only updating information to an existing and active registration. **Form must be completed in its entirety, or it will be returned.** Instructions are at the end of this form. Completed form should be sent to

Hazardous Waste Program
P.O. Box 176
Jefferson City, MO 65102 - 0176
573-751-3176

or

Hazardous Waste Program
1730 East Elm Street
Jefferson City, MO 65101-4130

I. TYPE OF NOTIFICATION

☐ A. New notification
☐ Permanent
☐ Temporary
Effective date of Temporary ID: _____

☑ Subsequent Notification

EPA ID Number: MOD076262500

Missouri ID Number: 001204

II. NAME OF INSTALLATION (BUSINESS NAME, SITE NAME OR D.B.A)

St. John's Regional Medical Center

III. LOCATION OF INSTALLATION (PHYSICAL ADDRESS)

STREET: 2727 McClelland Blvd.

CITY	STATE	ZIP CODE + 4
Joplin	MO	64804-1694

COUNTY NAME: Jasper

IV. INSTALLATION MAILING ADDRESS

STREET: Same

CITY	STATE	ZIP CODE + 4

A. Billing Address (Fill this section out for a separate billing address. If left blank, fee invoices will be sent to Mailing Address)

STREET:

CITY	STATE	ZIP CODE + 4

V. INSTALLATION CONTACT

FIRST NAME	LAST NAME	TITLE
Spencer	Dobbs	Safety Officer

E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE	EXTENSION
spencer.dobbs@mercy.net	(417) 625-2007	2007

VI. OWNERSHIP

Note: Make copies of this section for multiple ownership.

A. NAME OF INSTALLATION'S LEGAL OWNER: Mercy Health System

STREET, P.O. BOX OR ROUTE NUMBER: 14528 S. Outer 40 Dr.

CITY	STATE	ZIP CODE + 4
Chesterfield	MO	63017

TELEPHONE NUMBER WITH AREA CODE	EXTENSION	E. CHANGE OF INSTALLATION OWNER INDICATOR
(314) 579-6100		☑ Yes ☐ No Date of Change: 11/01/2009

C. INSTALLATION OWNER TYPE - MARK ONE
☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☑ Hospital ☐ Other

D. NAME OF PROPERTY'S LEGAL OWNER:

STREET, P.O. BOX OR ROUTE NUMBER:

CITY	STATE	ZIP CODE + 4

TELEPHONE NUMBER WITH AREA CODE	EXTENSION	E. CHANGE OF PROPERTY OWNER
		☐ Yes ☐ No Date of Change:

F. PROPERTY OWNER TYPE (MARK ONE)
☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Hospital ☐ Other

VII. TYPE OF REGULATED WASTE ACTIVITY (ONLY MARK THE FOLLOWING SECTIONS THAT APPLY)

A. Hazardous Waste Activities

1. Generator of hazardous waste (Choose only one of the following four categories.)

- ☐ a. LQG: Greater than 1,000kg (2,220 lbs.) of non-acute hazardous waste or 1kg (2.2 lbs.) of acute hazardous waste in a calendar month.
- ☑ b. SQG: Generate 100 to 1,000kg (200-2,220 lbs.) of non-acute hazardous waste at any one time.
- ☐ c. CESQG: Generate less than 100kg (220 lbs.) of hazardous waste in a calendar month and never accumulate 100kg (220 lbs.) or more of hazardous waste at any one time.
- ☐ d. Not a generator. Generate no hazardous waste at any time.

In addition, indicate other generator activities.

- ☐ e. United States importer of hazardous waste.
- ☐ f. Mixed waste (hazardous and radioactive) generator.

For items 2 through 5, check all boxes that apply.

- ☐ 2. Transporter of hazardous waste.
  - ☐ a. Transporter.
  - ☐ b. Transfer Facility (at your site).
- ☐ 3. Treater, storer or disposer of hazardous waste (at your site).
  Note: A hazardous waste permit is required for this activity.
- ☐ 4. Recycler of hazardous waste (at your site).
  Note: A hazardous waste permit may be required for this activity.
- ☐ 5. Exempt boiler or industrial furnace.
  - ☐ a. Small quantity on-site burner exemption.
  - ☐ b. Smelting, melting and refining furnace exemption.
- ☐ 6. Underground injection control.
- ☐ 7. Receives hazardous waste from off-site.

B. Universal Waste Activities

1. Large quantity handler of universal waste (accumulate 5,000kg or more). [Refer to Missouri regulations to determine what is regulated.] Indicate types of universal waste managed or accumulated at your site. Check all boxes that apply.

	MANAGE
a. Batteries	☐
b. Lamps	☐
c. Pesticides	☐
d. Thermostats	☐

☐ **2. Destination facility for universal waste. Note: A hazardous waste permit may be required for this activity.**

C. Used Oil Activities (Check all boxes that apply)

1. Used oil transporter – Indicate type(s) of activity(ies).

- ☐ a. Transporter
- ☐ b. Transfer facility

2. Used oil processor or re-refiner – Indicate type(s) of activity(ies).

- ☐ a. Processor
- ☐ b. Re-refiner

3. ☐ Off-specification used oil burner

4. Used oil fuel marketer – Indicate type(s) of activity(ies).

- ☐ a. Marketer who directs shipment of off-specification used oil to off-specification used oil burner.
- ☐ b. Marketer who first claims the used oil meets the specifications.

VIII. DESCRIPTION OF REGULATED WASTE ACTIVITY (USE ADDITIONAL SHEETS IF NECESSARY)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). For waste codes see 40 CFR 261.20 - 261.24 or 40 CFR 261.31 - 261.33. Use additional page if more spaces are needed for waste codes.

D001						
D002						
D008						
F003						

B. Waste Code for State-Regulated (e.g., non-Federal) Hazardous Waste. List the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use additional page if more spaces are needed for waste codes.

IX. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS CODE(S)

Visit www.census.gov/eos/www/naics for NAICS code list.

A.	B.	C.	D.
622110			

DESCRIBE PRINCIPAL BUSINESS ACTIVITY

X. COMMENTS

XI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

SIGNATURE (ORIGINAL INK REQUIRED)	NAME AND OFFICIAL TITLE (TYPE OR PRINT)	DATE SIGNED
	Spencer Dobbs - Safety Officer	5-18-2011

Policy Name: Laboratory Health and Safety Policy and Procedure		
Policy # HS-Lab 4.0		Page 1 of 2
Developed: 06-01-92	Reviewed/Revised: 05-16-11	Effective Date: 08-03-06

Material Safety Data Sheets (MSDS)

MSDS are maintained by the 3-E company. 3-E may be contacted by dialing MSDS (6737) on any hospital extension or 1-800-451-8346. 3-E may be called for emergencies (poisoning, exposure, spills, contamination, fire), Regulatory agency requests (OSHA, JCAHO, EPA, FD, etc.), or employee requests for information.

Information you should have when calling:

Product name and product part number
Manufacturer name
UPC code (if available)

However, if you do not have all of this information when calling, 3-E personnel will still be able to help.

Supervisors in each laboratory department will obtain and evaluate the MSDS for any chemical or reagent used in the department. Any chemical that is ignitable, corrosive, reactive, or toxic will be disposed of as "Hazardous Waste." See page 26 of this policy. The MSDS information will be sent to the 3-E company when any new reagents or chemicals are introduced to insure 3-E obtains the appropriate MSDS.

The laboratory relies on the chemical manufacturer's information from the MSDS to ascertain whether the chemical is hazardous.

Chemical Storage

Chemical storage is kept as small as practical. Storage on bench tops and in hoods may cause potential exposure to fire and spills. Flammable and chemical cabinets are used for chemical storage only. Flammable liquids are stored in flammable storage cabinets, according to NFPA standards.

Toxic chemicals including carcinogens are stored in ventilated storage areas in unbreakable chemical-resistant secondary containers. These containers are labeled **"CAUTION: HIGH CHRONIC TOXICITY OR CANCER-SUSPECT AGENT."**

Waste Disposal

Infectious waste in the state of Missouri and the city of Joplin is described as:
Any liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

Laboratory waste is segregated at the point of use into categories that include

- infectious/biohazard waste
- needles/sharps
- chemical waste
- regular trash

Biohazard containers are kept upright throughout use and are routinely checked by Environmental Services and disposed of when three-quarters full.

All infectious waste is placed in leak-proof biohazard containers and are stored in Microbiology and disposed of by autoclaving, by Medical Technologists in the Microbiology Department.

All sharps and glassware are disposed of immediately after use in containers that are closable, puncture-resistant, leakproof on the sides and bottom, and appropriately labeled with a biohazard label and are located throughout the laboratory. These containers are placed in the immediate area of use no more than 100 feet from the user. When the containers of sharps are moved from the area of use, the containers are closed and placed in a secondary container if they may leak.

Regulated hazardous waste is placed in containers that are closable and constructed to contain all contents and to prevent fluids from leaking during handling, storage, transport, or shipment. The containers are labeled as "Hazardous Waste," with the date of accumulation. When containers are full, they are closed before removal to prevent the contents from spilling or protruding during handling, storage, transport, or shipping. If outside contamination of a container occurs, it is placed in a second container that has the same qualities as the first and is handled in the same manner. Hazardous waste containers are then taken to the Environmental Services storage closet and placed in a locked cabinet. Storage area and waste containers are inspected daily for the following: Date of accumulation, DOT sticker, containers closed, no leaks.

St. John's Regional Medical Center
Joplin, Missouri
Laboratory Policy and Procedure

Procedure Name: MRSA by PCR		
Section: Microbiology	**Page 1 of 1**	**Procedure: MICRO-15.3**
Developed: 04/13/10	**Reviewed/Revised:**	**Effective Date: 05/10/10**

SPECIMEN (REQUIREMENTS):

To obtain adequate specimen, follow the instructions in this section closely.

1. Open the Cepheid Collection Device by peeling back the outer packaging.
2. Ask the patient to tilt his/her head back. Insert dry swabs approximately 1–2 cm into each nostril.
3. Rotate the swabs against the inside of the nostril for 3 seconds. Apply slight pressure with a finger on the outside of the nose to help assure good contact between the swab and the inside of the nose.
4. Using the same swabs, repeat for the second nostril, trying not to touch anything but the inside of the nose.
5. Remove the plastic transport tube. Twist off the tube cap and discard it. Place the swabs into the plastic transport tube. The swabs should go all the way into the tube until they rest on top of the sponge at the bottom of the tube. Make sure the red cap is on tightly. **Note: the swabs should stay attached to the red cap at all times.**
6. Label the plastic transport tube with patient ID and send to the laboratory.

Store swab specimen at room temperature (15-30°C) if it will be processed within 24 hours, otherwise store swab at 2-8°C. The swab specimen is stable up to 5 days when stored at 2-8°C.

SAFETY PRECAUTIONS (IF NEEDED):

Treat all biological specimens, including used cartridges, as if capable of transmitting infectious agents. Because it is often impossible to know which might be infectious, all biological specimens should be treated with universal precautions. Guidelines for specimen handling are available from the U.S. Centers for Disease Control and Prevention and the Clinical and Laboratory Standards Institute (formerly National Committee for Clinical Laboratory Standards). Follow the hospital and laboratory safety procedures for working with chemicals and handling biological samples. Dispose of used Xpert MRSA cartridges according to 40 CFR 262 (See Lab Safety policy – HS LAB 4.0).

EQUIPMENT/REAGENTS/SUPPLIES:

The Xpert MRSA(GXMRSA-100N-10) contains sufficient reagents to process 10 specimens or quality control samples. The kit contains the following:

Xpert MRSA Assay Cartridges with integrated reaction tubes

Bead 1 (freeze-dried) 1 per cartridge

- Polymerase
- dNTPs
- BSA (bovine serum albumin)

Bead 2 (freeze-dried) 1 per cartridge

- Primers
- Probes
- BSA (bovine serum albumin)

Bead 3 (freeze-dried) 1 per cartridge

Sample Processing Control (SPC) ~6000 non-infectious sample preparation control spores

ES Storage Closet

COPY

DAILY: Hazardous Waste Storage, Bottles Dated/Closed/No spill

Date	Initial
5-6-11	dl
5-7-11	dl
5-8-11	RK
5-9-11	dl
5-10-11	dl
5-11-11	dl
5-12-11	KG
5-13-11	DL

Date	Initial

Date	Initial

Cepheid

Material Safety Data Sheet *Xpert MRSA*
Effective Date: October 15th, 2010
Supercedes: September 8th, 2010

1. Identification of the Material and Company/Undertaking

Product name: Xpert MRSA Catalog #: GXMRSA-100N-10
Common name: Not applicable GXMRSA-120
Compound name: Not applicable

Manufacturer:
Cepheid
904 Caribbean Drive
Sunnyvale, CA 94089
USA

Telephone Numbers:
(888) 838-3222 (6 AM – 5 PM Pacific time US)
Outside of the US: 1 (408) 541-4191
24-Hour Emergency Telephone:
CHEMTREC (800) 424-9300
Outside of the US: 1 (703) 741-5500
E-mail: techsupport@cepheid.com

The following MSDS is for the final finished product only as used in the laboratory that contains six (6) components, some of which are in cartridges. If manufacturing this product, consult the MSDSs for the individual ingredients and reagents.

2. Hazards Identification

Appearance: This product contains 6 parts – 5 of the parts (3 beads, which are freeze-dried white powders, and 2 clear, colorless liquid reagents) are contained in cartridges. The other component is a reagent that is a clear, colorless liquid that that is contained in a vial.

Signal Word: **DANGER for handling of:**
Reagent 1 containing Sodium Hydroxide

CAUTION for handling of all other kit components

Hazard Overview: **Reagent 1 contains Sodium Hydroxide solution, which is a CORROSIVE LIQUID. Causes burns to skin and eyes if directly contacted. Causes irritation to mucous membranes and respiratory tract if inhaled. Reagent 1 is contained in the cartridge.**

Bead components (Bead 1; Bead 2; Bead 3) are contained in cartridges and will not present a hazard under normal use conditions; if cartridge is broken or damaged and beads are spilled or released, contact may cause reversible skin and eye irritation.

Elution Reagent contains guanidine thiocyanate which is considered toxic to the aquatic environment.

Reagent 2 is not considered hazardous under US hazard communication regulations (29 CFR 1910.1200), EU directives for classification and labeling of substances or mixtures or the Global Harmonization System for classification and labeling of substances or mixtures. Reagent 2 is contained in the cartridge.

Statement of Known Hazard:

Reagent 1 is a CORROSIVE LIQUID. Avoid skin contact, eye contact and inhalation. Wear eye protection and skin protection to avoid contact.

Elution Reagent is a hazard to the aquatic environment. Dispose of according to local, state and federal regulations.

Other components of this product would not be considered hazardous under normal conditions of use.

EU Indicator of Danger: **Reagent 1 – C** (Corrosive)
Elution Reagent – Xn; N (Harmful; Dangerous to the environment)

All other components of this product: Not applicable

EU Risk Phrases: **Reagent 1 – R34 Causes Burns.**
Elution Reagent – R 32 Contact with acids liberates very toxic gas
R 52/53 Harmful to the aquatic environment; may cause long-term effects to the aquatic environment

All other components of this product: Not applicable

3. Composition Information on Ingredients

This product consists of a cartridge with three reagent beads to which aqueous reagents are added as part of an assay.

Bead 1 is a freeze-dried powder bead as contained in the cartridge with the following hazardous ingredients:

Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
HEPES Acid and Salt	7365-45-9 (For Acid)	230-907-9 (For Acid)	<10	R36/37/38
Magnesium Chloride	7786-30-3	232-094-6	<5	R36/37/38
Tween 20	9005-64-5	200-315-5	<5	R36/37/38
Bovine Serum Albumin	9048-46-8	232-936-2	<3	R42

All other ingredients of **Bead 1** are either non-hazardous under US and EU regulations or GHS guidelines and/or at concentrations less than 1% in the mixture.

Bead 2 is a freeze-dried powder bead as contained in the cartridge with the following hazardous ingredients:

Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
HEPES Acid and Salt	7365-45-9 (For Acid)	230-907-9 (For Acid)	<20	R36/37/38
Tween 20	9005-64-5	200-315-5	<5	R36/37/38

All other ingredients of **Bead 2** are either non-hazardous under US and EU regulations or GHS guidelines and/or at concentrations less than 1% in the mixture.

Bead 3 is a freeze-dried powder bead as contained in the cartridge with the following hazardous ingredients:

Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
HEPES Acid and Salt	7365-45-9 (For Acid)	230-907-9 (For Acid)	<10	R36/37/38

All other ingredients of **Bead 3** are either non-hazardous under US and EU regulations or GHS guidelines and/or at concentrations less than 1% in the mixture.

Reagent 1 contains the following:

Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
Sodium Hydroxide	1310-73-2	215-185-5	4%	R34 (for 4% solution)

Reagent 2 contains ingredients that are either considered non-hazardous under US and EU regulations or GHS guidelines and/ or at concentrations less than 1% in the mixture.

Elution Reagent contains the following ingredients

Ingredient	CAS#	EINECs / ELINCS #	% Composition	EU Risk Phrase
Guanidine thiocyanate	593-84-0	209-812-1	20-30	R20/21/22/32/52/53

All other ingredients in Elution Reagent are either non-hazardous under US and EU regulations or guidelines and/or at concentrations less than 1% in the mixture.

4. First Aid Measures

For Reagent 1:

Eye: Flush thoroughly with water and notify supervisor and EHS personnel. Get medical aid.

Skin: Flush thoroughly with water and notify supervisor and EHS personnel. Get medical attention.

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Inhalation: Remove to fresh air and get medical attention for any breathing difficulty.

For all other parts of the kit if contacted:

Eye: Flush thoroughly with water and notify supervisor and EHS personnel. If an irritation develops, get medical aid.

Skin: Flush thoroughly with water and notify supervisor and EHS personnel. If an irritation develops, get medical attention.

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Inhalation: Remove to fresh air and get medical attention for any breathing difficulty.

5. Fire Fighting Measures

Flammability/Explosivity: None of the components of the kit are considered flammable or explosive.

Extinguishing Media: CO_2, multipurpose dry chemical or vaporizing liquid fire extinguisher.

Special Fire Fighting Procedures:
Wear full protective clothing and a self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode for surrounding fire. Decontaminate all equipment after use.

Hazardous Decomposition Products:
Elution Reagent may emit small quantities of cyanide in a fire.

6. Accidental Release Measures

For all components if spilled:

If product/material is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment. For small spills, wear gloves and absorb spill with paper towel. **For small spills of Reagent 1 containing sodium hydroxide, avoid skin and eye contact by using rubber or nitrile gloves and wearing of eye protection to avoid contact.** Dispose of material according to local, State and Federal waste disposal regulations (see Section 13).

For larger spills, wear personal protective clothing to minimize exposure such as overgarment, gloves and eye protection (goggles), cover spill with absorbent material. **For larger spills of Reagent 1 containing sodium hydroxide, wear overgarment and personal protective equipment to avoid skin contact including goggles and rubber or nitrile gloves.** Collect spilled material, absorbent, and rinse waters into suitable containers for proper disposal in accordance with applicable local, state or Federal waste disposal regulations (see Section 13).

7. Handling and Storage

Handling Precautions: Avoid skin contact, eye contact and inhalation.

Storage Requirements: Store according to product labeling.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits: **Reagent 1** contains sodium hydroxide which has ACGIH TLV and NIOSH REL of 2 mg/m^3 as a ceiling value not to be exceeded for any 15-minute period and an OSHA 8-hour time weighted average of 2 mg/m^3. None of the other ingredients contained in this product have occupational exposure limits established by OSHA, NIOSH, ACGIH or Cepheid.

Engineering Controls: None normally required. When practicable, handle material in enclosed or contained processes or in processes with effective local exhaust ventilation.

Eye Protection: Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face.

Respiratory Protection: When possible, handle material in enclosed processes or containers. If it is properly handled with effective ventilation or containment, respiratory protection should not be needed.

Skin Protection: Rubber gloves are recommended to minimize potential for skin contact. In laboratory setting, wear lab coat or other protective overgarment at a minimum to minimize skin contact. Base the choice of protection on the job activity and potential for skin contact.

Other: Facilities storing or using this product should be equipped with an eyewash station and a safety shower. Wash hands, face and other potentially exposed areas immediately after handling material (especially before eating, drinking, or smoking). Decontaminate all protective equipment after use.

9. Physical and Chemical Properties

Physical State: Beads are solid components in cartridges; reagents are liquids which are primarily buffered aqueous solutions.
Odor: Components are odorless.
Vapor Pressure: Minimal.
Evaporation Rate: Minimal.
Viscosity: Reagents are aqueous.
Boiling Point: Liquid reagents near 100 degrees C .
Freezing/Melting Point: Liquid reagents near 0 degrees C.
Solubility: Reagents are already aqueous; beads are soluble in aqueous solutions.
pH: >12.5 (**Reagent 1**); 6.6 – 8.6 (Solids & Other liquid reagents).

10. Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials.
Incompatibilities with Other materials: Strong oxidizing agents, peroxides, strong acids and bases, acid chlorides, acid anhydrides, alkali metals, ammonia.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, sodium oxides, potassium oxides, hydrogen chloride, cyanide.
Hazardous Polymerization: Will not occur.

11. Toxicological Information

Acute Toxicity: The cartridges containing freeze-dried powders should not present an acute toxicity hazard unless the beads are released or spilled. Magnesium chloride has low to moderate acute toxicity with oral LD50 of 2800 mg/kg in the rat. Sodium hydroxide is acutely toxic orally due to its corrosivity. Guanidine thiocyanate has an acute oral LD50 of 593 mg/kg. Tween 20 is not considered acutely toxic.

Irritation/Sensitization: HEPES Salt and HEPES acid are considered skin and eye irritants. Bovine serum albumin, as a foreign protein is considered a potential allergen but because it is contained in the bead within the cartridge, the potential to cause an allergic reaction under normal use conditions is considered low. Tween 20 is considered an irritant to the skin and eyes if contacted and respiratory tract if inhaled.

Repeated dose toxicity – No data identified on ingredients.

Reproductive (fertility) and Developmental (birth defects) toxicity – No data identified. None of the ingredients are considered reproductive or developmental toxicants.

Mutagenicity and Carcinogenicity – No data identified on mutagenicity. None of the ingredients are listed by NTP, IARC or OSHA as carcinogens.

12. Ecological Information

Ecotoxicity: Of the ingredients, guanidine thiocyanate is considered harmful to aquatic organisms. As sodium hydroxide adjusts pH, it has the potential to have harmful effects in the environment if not properly disposed of.
Environmental Fate: No data identified.

13. Disposal Considerations

Biological specimens, including used cartridges, should be treated as capable of transmitting infectious agents. Consult your institution's environmental waste personnel on proper disposal of used cartridges and unused reagents. This material may exhibit characteristics of federal EPA Resource Conservation and Recovery Act (RCRA) hazardous waste requiring specific disposal requirements. Check state and local regulations as they may differ from federal disposal regulations. Institutions outside the USA should check their country hazardous waste disposal requirements.

14. Transport Information

Transport in accordance with all federal, state, and local transportation regulations.

With the exception of **Reagent 1**, all of the other components are not regulated by US DOT or IATA.

The transport classification of **Reagent 1 contains 1.0N Sodium Hydroxide is** :
Class 8, Packing Group II, UN1824.
Proper Shipping Name: Sodium Hydroxide Solution.

15. Regulatory Information

US OSHA: This MSDS complies with the requirements under 29 CFR 1910.1200

Two of the components of the kit require labeling under either or both of US and EU regulations and therefore labeling of this product should contain the following.

For Reagent 1 - Contains Sodium Hydroxide Solution

DANGER
Causes burns.
Keep out of reach of children.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
EU Risk and Safety Phrases: R 34; S2/26/37/39/45

For Elution Reagent - Contains Guanidine Thiocyanate

CAUTION
Contact with acids liberates very toxic gas.
Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment.
Avoid release to environment; refer to special instructions/Safety data sheets.
EU Risk and Safety Phrases: R 32; 52/53; S 61

LBL PN: 300-6924, Rev F

Canada – WHMIS Classifications
Reagent 1 is a Corrosive – Class E according to WHMIS classification.
All other components are not classified according to WHMIS classification criteria.

California Proposition 65
None of the ingredients are listed under California Proposition 65.

SARA 313: Not listed.
CERCLA : Sodium hydroxide has a reportable quantity limit of 1000 lbs; no other ingredients are regulated under CERCLA.
RCRA: Not listed.

For R&D consumers, products are to be used only for R&D purposes.

16. Other Information

No other data available.

Abbreviations:
ACGIH: American Conference of Governmental Industrial Hygienists
CAS#: Chemical Abstract Services Number
CFR Code of Federal Regulations

CERCLA:	Comprehensive Environmental Response, Compensation, and Liability Act
DOT:	Department of Transportation
EINECS:	European Inventory of New and Existing Chemical Substances
EU:	European Union
GHS:	Global Harmonization System
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
OSHA:	Occupational Safety and Health Administration
NTP:	National Toxicology Program
RCRA:	Resource Conservation and Recovery Act
SARA:	Superfund Amendments and Reauthorization Act
TSCA:	Toxic Substances Control Act

Cepheid makes no warranties as to the accuracy or completeness of this information and disclaims any liability in connection with its use. Cepheid's obligations shall be only as set forth in Cepheid's standard terms and conditions of sale for this product. In no case will Cepheid be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product.

COPY

St. John's

2727 McClelland Boulevard Joplin, Missouri 64804

Education Attendance Record

Topic: Hazardous Waste Management

Instructor: Karen Adkins Coordinated by: K Adkins Date: 5-6-11 to 5-13-11

Length:

- ☑ Yes ☐ No JCAHO required
- ☑ Yes ☐ No Organization required
- ☑ Yes ☐ No Department required
- ☐ Yes ☑ No Population Serve

\# Classes on this record:

Need: Identified by:

↑ INSTRUCTORS/COORDINATORS: ALL AREAS ABOVE MUST BE COMPLETED ↑

Educational attendance is tracked at St. John's Regional Medical Center through Badge numbers. IF YOU FAIL TO PRINT YOUR NAME LEGIBLY AND PROVIDE YOUR EMPLOYEE ID NUMBER CORRECTLY, YOUR ATTENDANCE TO THE PROGRAM WILL NOT BE RECORDED IN YOUR EDUCATION RECORD.

Name (PRINT LEGIBLY)	Employee ID Number (Print legibly) *Required for attendance credit*	Job Title	Cost Center Number	Mercy Clinic Co-worker?
1. Don Leow	166771	MT	7010	Y/N (Y circled)
2. Ashli O'Brien	166770	MT	7010	Y/N (Y circled)
3. Kerry Harris	167177	MT	7010	Y/N (N circled)
4. Ashley Mathis	166880	MT	7010	Y/N (N circled)
5. Kasha Gilbert	167105	MT	7010	Y/N (N circled)
6. Annie White	167482	MT	7010	Y/N
7. Jon Gray	166235	MT	7010	Y/N (N circled)
8. Jeanne Gossett	166505	MT	7010	Y/N (N circled)
9. Tara Simpson	168197	Student	7010	Y/N (N circled)
10. [illegible]	166242	MT	701	Y/N (N circled)
11. Sarah Olaniyan				Y/N
12. Denise Lucas	166601	HT	7014	Y/N (N circled)
13. Natalie Rush	167708	MT	7010	Y/N (N circled)
14. Nancy O'Brien	165974	MT	7010	Y/N (N circled)
15. Brent Harrold	167640	MT	7010	Y/N (N circled)
16. Rebecca L. Noblett	167956	Histo Tech	7014	Y/N (N circled)
17. Karla Bradley	166508	Transcription	7014	Y/N (N circled)
18. Anna Green	222036	MT	7010	Y/N (N circled)
19. [illegible]	166095	MT	7010	Y/N (N circled)
20. Toby Haines	166204	MT	7010	Y/N (N circled)

SHOULD BE SENT TO EDUCATIONAL SERVICES WITHIN ONE WEEK OF PROGRAM. Education attendance records not received within 45 days of completion of the program will not be entered into the computerized record. Incomplete Education Attendance records will not be entered into the computerized record (2/6/2001)

Updated 2/2010

For Education Use Only

- ______ Length of Class (hours):
- ______ Total Number of Students:
- ______ Student Hr. (Students x length)
- ______ Trauma Hours
- ______ MONA Hours

Computer Code: ____________

Instructional Hours ____________

COPY

St. John's

2727 McClelland Boulevard Joplin, Missouri 64804

Education Attendance Record

Topic: Hazardous Waste Management

Instructor: Karen Adkins Coordinated by: K Adkins Date: 5-16-11 to

Length:

☑ Yes ☐ No JCAHO required
☑ Yes ☐ No Organization required
☑ Yes ☐ No Department required
☐ Yes ☑ No Population Serve
Classes on this record: _____

Need: _____ Identified by: _____

↑ INSTRUCTORS/COORDINATORS: ALL AREAS ABOVE MUST BE COMPLETED ↑

Educational attendance is tracked at St. John's Regional Medical Center through Badge numbers. **IF YOU FAIL TO PRINT YOUR NAME LEGIBLY AND PROVIDE YOUR EMPLOYEE ID NUMBER CORRECTLY, YOUR ATTENDANCE TO THE PROGRAM WILL NOT BE RECORDED IN YOUR EDUCATION RECORD.**

Name (PRINT LEGIBLY)	Employee ID Number (Print legibly) *Required for attendance credit*	Job Title	Cost Center Number	Mercy Clinic Co-worker?
1. Tim Wempa	166207	MT		Y/N
2. Janis Ball	166234	MT		Y/N
3.				Y/N
4.				Y/N
5.				Y/N
				Y/N
				Y/N
8.				Y/N
9.				Y/N
10.				Y/N
11.				Y/N
12.				Y/N
13.				Y/N
14.				Y/N
15.				Y/N
16.				Y/N
17.				Y/N
18.				Y/N
19.				Y/N
20.				Y/N

SHOULD BE SENT TO EDUCATIONAL SERVICES WITHIN ONE WEEK OF PROGRAM. Education attendance records not received within 45 days of completion of the program will not be entered into the computerized record. Incomplete Education Attendance records will not be entered into the computerized record (2/6/2001)

Updated 2/2010

For Education Use Only
_____ Length of Class (hours):
_____ Total Number of Students:
_____ Student Hr. (Students x length)
_____ Trauma Hours
_____ MONA Hours

Computer Code: _____

Instructional Hours _____

St. John's Regional Medical Center

Universal Waste

Waste Management Regulations
40 CFR Part 273 Modified by Missouri Chapter 16
MO

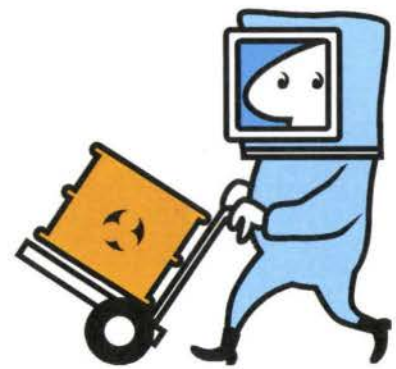
Proud to be Mercy | St. Johns

Established to ease & simplify the regulatory burden on small business

Definition:

Hazardous Waste that falls into one of the following categories:

- ✓ **Widespread in it use**
- ✓ **Commonly found in medium or large volumes**
- ✓ **Exhibit only low level hazards**
- ✓ **Easily Managed**



What is considered Universal Waste in MO

- **Batteries – Ni-Cd, Mercury, Lithium & Sealed Lead-Acid**
- **Pesticides – Recalled or banned & obsolete because of changes in cropping patterns**
- **Thermostats – Containing Mercury switches**
- **Mercury containing Lamps – Fluorescent, hazardous incandescent, high pressure sodium, mercury vapor, metal halide & high intensity discharge (HID)**

Key Components of MO Universal Waste Rule

- **Large quantity handlers accumulate ≥ 11,000 lbs at one time**
  - Must maintain records of their accumulation
- **Small quantity handlers accumulate < 11,000 lbs at one time**
  - Not required to keep records
- **Businesses that produce < 220 lbs in one month are considered "Conditionally Exempt"**

Responsibilities for Large & Small Quantity Handlers

- Must not dispose of into the environment this includes preventing releases
- Must not dilute or treat a universal waste, break or crush mercury containing lamps without a MO Resource Recovery Certification or permit
- Must label as "Universal Waste"
- Only accumulate on site for one year
- Must train staff on proper handling & emergency procedures
- Must respond to spills & manage spill residue as hazardous waste

Responsibilities for Large & Small Quantity Handlers

Small Quantity Handlers:

» Do not need to register or obtain an EPA identification number

» Do not need to keep records of universal wastes received or shipped

Large Quantity Handlers:

» Must register & obtain an EPA identification number

» Have recordkeeping requirements

Resources for More Information:

- **Missouri Statute Search – www.moga.mo.gov/statutesearch**
- **Missouri Code of Regulations – www.sos.mo.gov**
- **Code of Federal Regulations – www.gpoaccess.gov/cfr/index.html**

St. John's Regional Medical Center

Fluorescent Lamps

Resource Conservation & Recovery Act (RCRA)
Universal Waste Rule 40 CFR 273 Subpart C

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Fluorescent Lamps:

- **Fluorescent, neon, high pressure sodium, mercury vapor, metal halide and high intensity discharge (HID)**
- **May also contain cadmium and lead**

Management

Is Your Spent Lamp Hazardous Waste???

2 Ways to Determine:

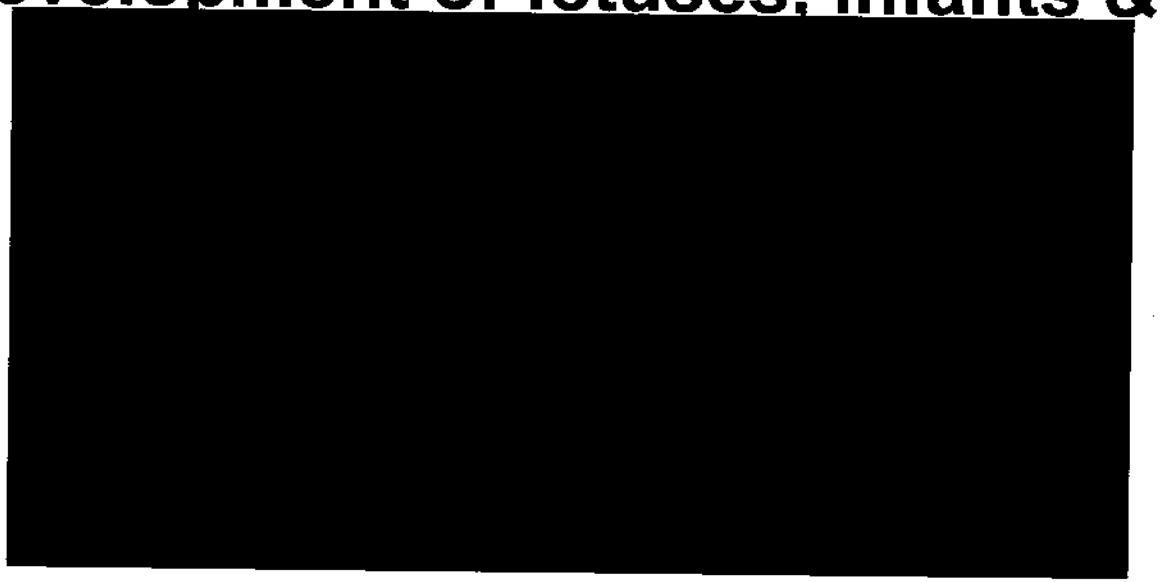
1. Analyze waste using the Toxicity Characteristic Leaching Procedure (TCLP)
2. Apply knowledge of the hazardous characteristic – Contact vendor/manufacturer for information

Managing Spent Lamps

Take directly to designated storage area
Store in original packaging
Seal container – Open only when adding lamps
Label container "Universal Waste-Mercury Containing Lamps"
Secure container to prevent breakage
Date container when the first lamp is added
Broken lamps MUST be handled as hazardous **waste**

Hazards of Mercury

- Route of exposure: Inhalation, ingestion & dermal contact
- Contamination of water, soil, plant & wildlife
- Potential for Adverse Health Effects – Impaired neurological development of fetuses, infants & children



In the Event of Lamp Breakage

Cleanup & Disposal Overview

❑ Before Cleanup

a. Have people leave the area

b. Contact Supervisor

c. Air out the area for 5-10 minutes by opening a window or door to the outdoor environment

d. Shut off the central forced heating/air conditioning system, if you have one

e. Collect materials needed to clean up broken bulb

In the Event of Lamp Breakage

Cleanup & Disposal Overview

❑ During Cleanup

a. Be thorough in collecting broken glass & visible powder

b. Place cleanup materials in a sealable container

In the Event of Lamp Breakage

Cleanup & Disposal Overview

❑ After Cleanup

a. Promptly place all bulb debris & cleanup materials outdoors in a trash container or protected area until materials can be disposed of properly. Avoid leaving any bulb fragments or cleanup materials indoors.

b. If practical, continue to air out the area and leave the heating/air conditioning system shut off for several hours.

Resources for More Information:

- Missouri Statute Search – www.moga.mo.gov/statutesearch
- Missouri Code of Regulations – www.sos.mo.gov
- Code of Federal Regulations – www.gpoaccess.gov/cfr/index.html
- MO Dept. of Natural Resources – Publication 24
- EPA 530-R-09-001"Fluorescent Lamp Recycling"

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MERCY
ST. JOHN'S
REGIONAL MEDICAL CENTER

2727 MCCLELLAND BOULEVARD ■ JOPLIN, MISSOURI 64804-1694
417-781-2727 ph

Meeting Sign-In Sheet

Project: Handling Procedures for Universal Waste **Meeting Date:** May 12, 2011

Organizer: Safety & Security **Place/Room:** Plant Ops. Dept.

Name	Dept	Emp. ID Number	Signature
1. Doug Coffey	P.O.	166540	Doug K. Coffey
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Meeting Sign-In Sheet

Project:	Handling Procedures for Universal Waste	**Meeting Date:**	May 12, 2011
Organizer:	Safety & Security	**Place/Room:**	Plant Ops. Dept.

Name	Dept	Emp. ID Number	Signature
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Meeting Sign-In Sheet

Project: Handling Procedures for Universal Waste **Meeting Date:** May 12, 2011

Organizer: Safety & Security **Place/Room:** Plant Ops. Dept.

Name	Dept	Emp. ID Number	Signature
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Missouri Department of Natural Resources

The Universal Waste Rule in Missouri

Hazardous Waste technical bulletin 6/2006

What are Universal Wastes?

Universal wastes are hazardous wastes, but not all hazardous wastes can be universal wastes. In order to be a universal waste, a hazardous waste must meet certain criteria established by the U.S. Environmental Protection Agency (EPA). In general, to qualify as a universal waste a hazardous waste must be widespread, commonly found in medium to large volumes, exhibit only low-level hazards or be easily managed. It is important to note that disposal of hazardous wastes in Missouri sanitary landfills (except by households or de minimis amounts from conditionally exempt generators) has been illegal since Jan. 1, 1994 (Section 260.432 RSMo). Universal wastes in Missouri's rule include the following items:

- **Batteries**, such as nickel-cadmium (Ni-Cd) batteries, mercury, silver or lithium "button" batteries and small, sealed lead-acid batteries found in electronic equipment, mobile telephones, portable computers and emergency backup lighting. Those who generate lead-acid vehicle batteries have the option of managing their uncracked lead-acid batteries under the provisions of Title 40 of the Code of Federal Regulations (CFR) Part 266.80 or the Universal Waste Rule, in 40 CFR Part 273;

- **Pesticides** that have been recalled or banned from use, are obsolete, have become damaged or are no longer needed due to changes in cropping patterns or other factors. These have often been stored for long periods of time at businesses or in sheds or barns. In Missouri, pesticides cannot be sent to other universal waste handlers, but may be sent to a universal waste pesticide collection program, to a Missouri Certified Resource Recovery Facility or to a Universal Waste Destination Facility. Missouri does not allow transmission of pesticides between handlers due to the high toxicity level of these wastes and the belief that additional controls are necessary to assure adequate protection of human health and the environment when these wastes are handled. In addition, universal waste pesticide collection programs in Missouri must comply with the "Standard Operating Procedures for Universal Waste Pesticide Collection Programs in Missouri" that are referenced in the rule. Pesticides may be transmitted between pesticide collection programs that are in compliance with the rule. Missouri also added an option for allowing Missouri Certified Resource Recovery Facilities to accept pesticides if their certifications allow;

- **Thermostats**, mercury switches and mercury containing thermometers and manometers that are found in homes and commercial, industrial, agricultural and community buildings; and

- **Mercury containing lamps** that include fluorescent, high-pressure sodium, mercury vapor, metal halide and high intensity discharge (HID) lamps.

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Mercury switches, mercury-containing thermometers and manometers were added by Missouri to the original list of wastes (i.e., thermostats, batteries and pesticides) that may be managed under the provisions of the Universal Waste Rule. Hazardous incandescent lamps were added to federal universal waste regulations adopted by Missouri effective Nov. 30, 2001.

What is the Universal Waste Rule?

The Universal Waste Rule is a set of federal environmental regulations adopted with modifications by Missouri. The effective date of the rule in Missouri was Jan. 31, 1999. The rule can be found in Chapter 16 of the *Missouri Hazardous Waste Management Regulations*, which references portions of 40 CFR Part 273. This rule identifies all universal wastes in Missouri and states how they can be handled in a lawful manner. To completely understand the rule, you should read both state and federal regulations, because the state often references the federal standards. The rule was designed to give generators of certain types of hazardous wastes an option to manage those wastes under less stringent Universal Waste Rule requirements rather than by the more stringent existing hazardous waste regulations. This alternative is offered to help reduce the regulatory burden on businesses and others that generate certain common hazardous wastes and to encourage collection, recycling and proper disposal of these wastes.

By reducing administrative requirements, this rule is expected to save companies compliance costs and to reduce the amount of time spent on paperwork. The rule is expected to encourage collection and recycling programs, that will result in more options to businesses, farmers and households for legal and cost-effective management and disposal of universal wastes.

The wastes covered under this rule are described in the "*What are Universal Wastes*" section of this bulletin.

Note: The management options noted in the Missouri Department of Natural Resources' Technical Bulletin, *Waste Fluorescent Lamp Management for Businesses and Institutions* previously published in 1996, ended on Jan. 31, 1999. The options allowed by the Universal Waste Rule make the guidance in this older version of the lamp bulletin obsolete. The Department requests individuals and businesses to recycle their copies of this bulletin and replace it with the current version dated 7/2003, entitled "*Fluorescent Lamps technical bulletin* (Mercury-containing lamps including fluorescent, neon, high-pressure sodium outdoor, high intensity, and metal halide lamps)". The lamp bulletin for households and farmers is also being revised to include guidance for managing other universal wastes and will state that households and farmers also have the option of managing their wastes according to the provisions of the Universal Waste Rule if they wish.

What are the Basic Requirements for Managing Universal Wastes?

Anyone who wants to manage one or more of the universal wastes noted above under the Universal Waste Rule must determine his or her handler status. Large quantity handlers accumulate 5,000 kilograms (equivalent to 11,000 pounds) or more of universal waste (batteries, pesticides, mercury containing thermostats, switches, lamps, thermometers, and manometers, calculated collectively), at any time (approximately five to six tons), and small quantity handlers accumulate less than 11,000 pounds. The handler counts only those wastes that will be managed as universal wastes. All other hazardous wastes are calculated separately and determine the "hazardous waste generator status" of the business. The designation as a large quantity handler remains through the end of the calendar year in which the 11,000 pounds is accumulated.

Large and Small Quantity Handlers

- Must not dispose of a universal waste into the environment.
- Must not dilute or treat a universal waste or break or crush mercury containing lamps without a Missouri Resource Recovery Certification or permit.
- Must follow the waste management requirements stated in the rule for the particular waste(s) being managed.
- Small quantity handlers generating only universal wastes that they manage under this rule do not need to register or obtain an EPA identification number; large quantity handlers must register and obtain an EPA identification number if a number has not previously been obtained.
- Must prevent releases to the environment.
- Must label waste as a "universal waste" as described in the rule.
- May accumulate universal wastes on-site for up to one year.
- May accumulate universal wastes for more than one year for the sole purpose of facilitating proper recovery or disposal.
- May accept universal wastes from off site and keep them for up to one year (except for universal waste pesticides).
- Must train employees on proper handling and emergency procedures.
- Must respond to spills and manage the spill residue as hazardous waste.
- May self-transport the universal waste to an authorized destination facility or Missouri Certified Resource Recovery Facility (or for pesticides, to a Missouri Pesticide Collection Program). If self-transporting, the handler is required to meet universal waste transporter requirements in the rule.
- Small quantity handlers need not keep records of universal wastes received or shipped; large quantity handlers have recordkeeping requirements.
- Must comply with export requirements for foreign shipments if applicable.

Transporters

- Must not dispose of universal waste into the environment.
- Must not dilute or treat except to respond to spills.
- Must comply with the requirements of the Universal Waste Rule for the particular waste being managed as well as U.S. Department of Transportation regulations in 49 CFR part 171 through 180 for all universal wastes being shipped that meet the definition of hazardous material in 49 CFR 171.8.
- Are not required to use hazardous waste manifests (shipping papers or bills of lading are acceptable).
- May store universal waste at transfer facilities for up to 10 days.
- Must respond to releases and spill residue must be managed as a hazardous waste.
- Must only transport universal waste to a universal waste handler, Missouri Certified Resource Recovery Facility with authorization to accept the waste in question, destination facility or foreign destination. Pesticides must be taken to a universal waste pesticide collection program, to a destination facility, sent back to the registrant conducting the recall or to a Missouri Certified Resource Recovery facility with authorization to accept the waste in question.
- Must comply with export requirements for foreign shipments if applicable.

Destination Facilities

- Due to revisions in federal regulations which were effective in Missouri Nov. 30, 2001, all destination facilities, including Missouri certified resource recovery facilities, must have a Resource Conservation and Recovery Act permit for storage.
- Must have an appropriate hazardous waste storage, treatment or disposal facility permit and comply with the terms of the permit for the management of universal waste received.

- Must obtain and comply with the terms of a Missouri Certified Resource Recovery Facility authorization, if the destination facility recycles universal waste.
- Must send waste off site only to another destination facility or a foreign destination.
- Must keep records.

Who is affected by this rule?

Businesses

Universal wastes are generated by small and large businesses. In the past, businesses were required to manage universal wastes as hazardous waste. The Universal Waste Rule offers another option that eases the regulatory burden on businesses that generate these wastes by streamlining the administrative requirements. For example, certain small businesses that generate only universal wastes and manage them under this rule do not need to notify the state of their activities or pay hazardous waste fees and taxes on that waste. Further, the rule extends the amount of time that businesses can accumulate universal wastes on site to a year or more, as explained below. It also allows companies to transport the wastes with a common carrier (universal waste transporter), instead of a hazardous waste transporter, and it no longer requires companies to prepare a hazardous waste manifest (the transporter prepares a shipping paper).

In Missouri, this rule does not apply to any business that generates or accumulates less than 100 kilograms (220 pounds) of hazardous wastes per month or at any one time. Such generators are considered "conditionally exempt" from hazardous waste regulation. However, these small businesses are encouraged to participate voluntarily by using handlers and collection centers that legitimately recycle or dispose of their universal wastes. This rule will make it simpler for companies to establish collection programs and to participate in manufacturer take-back programs. Many large manufacturers and trade associations are already planning national and regional collection programs for their products.

Households

Households are not subject to hazardous waste management standards and are allowed to dispose of wastes covered under the universal waste rule with their trash. "Household waste" is defined in 40 CFR Part 261.4(b)(1). The department encourages residents to take their universal wastes to local collection centers or events when these are available for recycling or disposal.

Communities

Local communities can work with businesses and residents to encourage proper recycling or disposal of universal wastes. By easing the regulatory burden on businesses, more collection centers may become available. Communities can establish collection programs or help local businesses set up collection programs in their area based on the guidance in the rule.

How may I obtain copies of hazardous waste laws and regulations?

Copies of the Revised Statutes of Missouri are available through the Revisor of Statutes at (573) 526-1288, or are available online at www.moga.state.mo.us. Copies of the Missouri Code of State Regulations are available through the Missouri Secretary of State at (573) 751-4015, or are available online at www.sos.mo.gov. Federal regulations may be viewed at federal depository libraries, may be purchased from the U.S. Government Bookstore, the U.S. Government Printing Office, or from a commercial information service such as the Bureau of National Affairs. Federal Regulations are also available online at http://www.access.gpo.gov/nara/cfr/index.html.

For more information call or write:

For more information on the Universal Waste Rule, please contact:

Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176
Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-3176
www.dnr.mo.gov/env/hwp Program Home Page

Missouri Department of Natural Resources

Fluorescent Lamps

(Mercury-containing lamps including fluorescent, neon, high-pressure sodium, high-intensity discharge, mercury vapor, and metal halide lamps)

Hazardous Waste Program fact sheet 1/2007

Fluorescent lamps may contain toxic metals such as mercury, cadmium and lead. Unbroken lamps pose a minimal threat to human health and the environment. However, fluorescent lamps contain mercury vapor under pressure and when broken, people may be exposed to toxic levels of mercury vapor and other metals which can be easily inhaled.

The Missouri Department of Natural Resources encourages prudent lamp recycling to safeguard human health and to limit the amounts of toxic heavy metals entering the environment.

Note: Please recycle any previous bulletins on fluorescent lamp management for businesses in Missouri. With the publication of the Universal Waste Rule (UWR) in Missouri, the guidance in the previous bulletin for businesses is null and void.

What are fluorescent lamps?

There are various sizes and types of fluorescent lamps. Typically four and eight-foot long lamps are used in homes, offices, and institutions. High-intensity discharge (HID) lamps such as mercury vapor, metal halide, neon and high pressure sodium lamps are commonly used by farms, businesses and cities.

Fluorescent lamps are long-lasting and energy efficient when compared to standard light bulbs. Future use is expected to increase. Some manufacturers are now producing more energy efficient lamps with less mercury.

Management Guidance

Small Number of Lamps Generated

If your business is a conditionally exempt small quantity generator of hazardous waste and it generates one or two lamps on an infrequent basis (or if you are a household or farmer), you may dispose of these in a Missouri sanitary landfill. Missouri Hazardous Waste Law does not allow anything other than very small amounts of hazardous waste (such as mercury) to be disposed in Missouri sanitary landfills. Before disposal, place the lamp into the box the replacement lamp came in, put the box into a plastic bag and secure the bag at the top before placing it into the dumpster. These precautions will reduce the risk of immediate breakage and will help protect you and the trash hauler. To better protect the environment, the department encourages you to send your lamps to a certified recycler (or if you are a household or farmer to a local household hazardous waste collection program, if available in your area).

Note: Households and farmers that generate waste lamps have the option of handling the lamps as universal waste by complying with the UWR. A trash hauler or landfill operator has the right to refuse any waste for disposal.

Hazardous vs. Non-Hazardous Lamps

There are two methods you may use to determine whether or not the lamps are hazardous:

1. Test the waste. The test method for determining the toxicity of fluorescent lamps is the Toxicity Characteristic Leaching Procedure (TCLP). There are many reputable environmental laboratories that are capable of doing this test. Regulatory levels are published in the *40 Code of Federal Regulations 261.24* as follows:
   Mercury - 0.2 milligrams per liter (mg/l)
   Cadmium - 1 mg/l
   Lead - 5 mg/l

   If your laboratory analyses shows that TCLP levels for each constituent noted above are below the noted values, your waste is not hazardous. Your waste is hazardous if levels are equal to or greater than the levels stated for any one of the particular constituents noted above.

2. Apply knowledge of the hazardous characteristic. Most lamps that are old enough to be waste are likely hazardous. Some manufacturers now produce low-mercury fluorescent lamps. These lamps may not exceed the regulatory levels for the constituents noted above. Even some fluorescent lamps that are not low-mercury may not be hazardous. Lamp vendors may be able to provide data that show the toxic metal levels for the lamps you use. If the toxic metal levels are unknown, then the lamp is assumed to be hazardous.

Non-Hazardous Lamps

If you know your lamps are non-hazardous, you may send them to a lamp recycler or to a Missouri sanitary landfill. You should contact the landfill operator for permission before disposal. The landfill operator may refuse any waste. The landfill may require a special waste disposal request or test results before accepting the material. Even though non-hazardous lamps will pass TCLP and are not hazardous waste or universal waste, they still contain small amounts of mercury. Therefore, in an effort to reduce the amount of mercury released to the environment, you may choose to recycle your non-hazardous fluorescent lamps.

Hazardous Lamps

You may manage your unbroken hazardous lamps as either universal waste or as hazardous waste. Recycling at a Missouri facility that is certified for recovering mercury from such lamps is an option in either case. Any broken hazardous lamps must be managed as hazardous waste. Lamps should always be packed and stored in a manner to minimize breakage.

The total amount of hazardous or universal waste generated will determine how the generator is classified and what regulations apply. If you decide to manage your wastes as hazardous waste, you should obtain copies of the Missouri Hazardous Waste Management Law and regulations and the Code of Federal Regulations Title 40 Parts 260 through 280. More information about obtaining these regulations is provided at the end of this bulletin.

Lamps Sent for Recycling

Recycling is the preferred method of management for fluorescent lamps. Businesses in Missouri may send their unbroken lamps to a recycler in Missouri that has a valid resource recovery certification and an approval or permit from the department for lamp storage prior to recycling. Recyclers outside of Missouri may also be used as long as they have valid permits, certifications

or other authorization from the state to receive hazardous lamps. Also, unbroken lamps may be sent to another universal waste handler that will send them to a recycler. If unbroken lamps are sent as universal waste to a Missouri-certified resource recovery facility or to a universal waste destination facility in Missouri, you do not need to use a licensed hazardous waste transporter or hazardous waste manifests while in Missouri. For universal waste shipments, only universal waste transporters (common carriers) and shipping papers meeting U.S. Department of Transportation regulations are required. Large quantity handlers of universal waste (i.e., those who accumulate a total of 11,000 pounds of all types of universal wastes) need to track their shipments of unbroken lamps.

If you intend to send hazardous lamps to an out-of-state destination facility as universal waste, you should contact the environmental agencies in the states the lamps will travel through. Other states may require use of licensed hazardous waste transporters and hazardous waste manifests for shipments to a recycler, even though Missouri does not.

The Universal Waste Option

The UWR became effective in Missouri on Jan. 31, 1999. It provides a less-stringent option to hazardous waste generators for the management of certain widely generated wastes (i.e., mercury-containing lamps, thermometers, manometers, switches, thermostats, hazardous batteries and pesticides). Unbroken fluorescent bulbs may be managed as universal waste. Universal waste generators are called "handlers." The regulations are designed to allow handlers to safely collect cost-effective quantities of hazardous waste for eventual recycling or disposal. Under the UWR, fluorescent lamps may be sent to another universal waste handler, to an authorized universal waste destination facility, or to a Missouri Certified Resource Recovery Facility. For purposes of determining what regulations apply, figure the total accumulated amount of all types of hazardous wastes that you are managing as universal waste. In Missouri, this may include any or all of the wastes noted in the second sentence of this paragraph. A small quantity handler of universal waste accumulates less than 11,000 pounds (5,000 kg) of universal waste at any time. A large quantity handler of universal waste accumulates 11,000 pounds (5,000 kg) or more of universal waste at any time. If you accumulate 11,000 pounds at any time in a calendar year, you will retain your large quantity handler status until the end of the calendar year. The regulations are somewhat more stringent for large quantity handlers than small quantity handlers. For purposes of figuring your accumulation rate for fluorescent bulbs, please note that 17,500 of the standard four-foot lamps weigh 11,000 pounds (5,000 kilograms). If you wish to manage your fluorescent lamps as universal waste, you will want to obtain the department's Universal Waste Fact Sheet and also become familiar with the universal waste regulations published in 10 CSR 25-16.273 and 40 CFR Part 273 incorporated by reference.

In general, the following practices should be observed:

- Label containers with the words "Universal Waste-Mercury-Containing Lamp(s)", "Waste Mercury-Containing Lamp(s)", or "Used Mercury-Containing Lamp(s)";
- Do not store waste for more than one year unless you can show that the storage will facilitate proper recovery or disposal;
- Train employees on proper handling and emergency procedures;
- Manage broken lamps as hazardous waste;
- Large quantity handlers of universal waste must register with the department (small quantity handlers do not need to register);
- Large quantity handlers of universal waste must store the lamps so that they are not easily broken;
- Large quantity handlers of universal waste have some recordkeeping requirements (shipping

papers rather than hazardous waste manifests are used);
- Shipments are made according to U.S. Department of Transportation requirements.

Hazardous Waste

Fluorescent bulbs may be disposed of as hazardous waste. Broken fluorescent bulbs must be handled as hazardous waste. The total amount of hazardous waste streams you generate or accumulate in one month or at any one time will determine which hazardous waste regulations you must meet. For purposes of calculating your hazardous waste generation rate for fluorescent lamps, the department estimates 350 of the standard four-foot long lamps weigh about 220 pounds (100 kilograms). If you generate or accumulate at any one time:

- 220 pounds or less of non-acute hazardous waste and less than 2.2 pounds of acutely hazardous waste per month, you would be considered a conditionally exempt small quantity generator;
- between 220 pounds and 2,200 pounds of non-acute hazardous waste and less than 2.2 pounds of acutely hazardous waste per month, you would be considered a small quantity generator;
- 2,200 pounds or more of non-acute hazardous waste or 2.2 pounds or more of acutely hazardous waste per month, you would be considered a large quantity generator.

Please see the department's fact sheet *Does Your Business Generate Hazardous Waste* (pub 117) for more information.

General Information

- Do not deliberately break fluorescent lamps.
- Do not use small commercially available drum-type fluorescent lamp crushers. Use of these devices is illegal treatment of hazardous waste.
- Check with handlers, transporters, recyclers and disposal firms on recycling or disposal costs and options that may exist in your area to help you decide on the most safe and cost effective method of managing your waste.

How May I Obtain Copies of Hazardous Waste Laws and Regulations?

Copies of the Revised Statutes of Missouri are available through the Revisor of Statutes at (573) 526-1288, or are available online at http://www.moga.state.mo.us. Copies of the Missouri Code of State Regulations are available through the Missouri Secretary of State at (573) 751-4015, or are available online at http://www.mosl.sos.state.mo.us. Federal regulations may be viewed at federal depository libraries or may be purchased from a U.S. Government Bookstore, the U.S. Government Printing Office, or from a commercial information service such as the Bureau of National Affairs. Federal Regulations are also available online at http://www.access.gpo.gov/nara/cfr/index.html.

For more information call or write:

Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176
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1-800-361-4827 or (573) 751-3176
www.dnr.mo.gov/env/hwp/index.html Program Home Page

Missouri Department of Natural Resources

Does Your Business Generate Hazardous Wastes?

Hazardous Waste Program fact sheet 6/2006

This fact sheet provides general information to help businesses determine whether they generate hazardous wastes. It is for general guidance only and is not intended for use by interim status or permitted hazardous waste treatment, storage or disposal facilities. For complete information on the proper management of hazardous waste, readers should consult the appropriate federal and state law and regulations.

What is a Hazardous Waste?

A waste is a solid, gas or liquid material that is no longer used and will be discarded. The U.S. Environmental Protection Agency (EPA) and Missouri's Hazardous Waste Management Law define waste as hazardous if it has certain properties that could pose dangers to human health and the environment.

In 1976 the Congress of the United States passed a law called the Resource Conservation and Recovery Act (RCRA). Under RCRA, the EPA developed regulations for handling hazardous waste in ways that protect human health and the environment from the moment it is generated until its ultimate disposal. Missouri has adopted most of the federal regulations and made some amendments.

A waste is hazardous waste if it has certain characteristics (ignitability, corrosivity, reactivity, or toxicity) or if it is on a list of specific wastes determined to be hazardous. The types of hazardous wastes are discussed in the section called "Identifying Your Wastes".

Regulatory Citations

Throughout this document you will see citations such as "40 CFR 262." This refers to the specific section of the law or regulations dealing with the topic being discussed. The federal hazardous waste regulations are in the Code of Federal Regulations, Title 40, Part 260 through Part 280 (40 CFR 260-280). The Missouri Hazardous Waste Law is in the Revised Statutes of Missouri (RSMo), Sections 260.350-260.575. The hazardous waste rules are in the Code of State Regulations, Title 10, Division 25 (10 CSR 25).

Some businesses that commonly produce hazardous waste

It is impossible to list every type of business that generates hazardous waste. The following are some activities and businesses which may generate hazardous waste.

Your business is likely to produce hazardous waste if you

- Use petroleum products
- Use dyes, paints, printing inks, thinners, solvents, or cleaning fluids
- Use pesticides or other related chemicals
- Use materials that dissolve metals, wood, paper, or clothing (acids and caustics)

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- Use flammable materials
- Use materials that burn or itch upon contact with skin
- Use materials that bubble or fume upon contact with water
- Receive delivery of products with a shipping paper or label showing that the
- product is hazardous
- Use lubricating motor oils

Such businesses might include those that:

- Repair and maintain motor vehicles
- Do electroplating and other metal manufacturing and fabrication
- Operate printing equipment
- Do dry cleaning and laundering
- Do photographic processing and printing
- Operate laboratories
- Do building, road, and other construction
- Provide home or industrial pest control
- Manufacture or process chemicals
- Manufacture or formulate pesticides
- Paint
- Manufacture paint or paint-related products
- Manufacture textiles (including fabric, dyeing and finishing)
- Make or refinish furniture
- Manufacture or process cosmetics
- Chemically treat lawns, yards, or gardens
- Preserve wood
- Manufacture paper and paper products

Identifying your wastes

It is your responsibility to determine if your waste is hazardous. Wastes are considered hazardous if:

- The name of the substance is on any of the hazardous waste lists in 40 CFR 261 Subpart D and it meets the listing definition.
- The waste exhibits any one of the four characteristics of a hazardous waste in 40 CFR 261 Subpart C (ignitable, reactive, corrosive or toxic); or
- The waste is identified as a hazardous waste by Missouri regulations.

Listed Hazardous Wastes

Listed hazardous wastes appear on one of the lists in the federal regulation - the F list, K list, P list and U list.

F List - Contains hazardous wastes from non-specific sources. The wastes may come from various industrial processes. The list includes solvents used in degreasing, metal treatment baths and sludges, wastewaters from metal plating operations and dioxin-containing chemicals or their precursors. (See 40 CFR 261.31)

K List - Contains hazardous wastes generated by specific industrial processes. Examples of industries that may generate K-listed wastes are wood preservation, petroleum refining, explosives manufacturing, production of pigment, chemicals, or pesticides, and iron and steel production. (See 40 CFR 261.32.)

U List - Contains discarded commercial chemical products, off-specification chemicals, container residues, and residues from spills of these materials. It includes commercially pure grades of the chemical, technical grades of the chemical that are produced or marketed, and formulations in which the chemical is the only active ingredient. For example, excess pesticide listed on the U list would be a hazardous waste when it is discarded. [See 40 CFR 261.33(f).]

P List - Also contains discarded commercial chemical products, off-specification chemicals, container residues, and residues from spills of these materials. However, P-listed wastes are extremely toxic and/or reactive, so the requirements for managing these wastes are more strict than for other hazardous wastes. P-listed wastes are acutely hazardous wastes. [See 40 CFR 261.33(e).]

Characteristic Hazardous Waste

Some wastes that are not found on the lists may still be regulated hazardous wastes because they have characteristics that make them hazardous. The four characteristics are described here:

Ignitable - A liquid with a flashpoint of less than 140 degrees F., or solids that catch fire easily and burn so rapidly they create a hazard. Examples of wastes that may be ignitable are solvents, degreasers, lacquer thinners, epoxy resins, adhesives, oil based paints, paint sludges and magnesium dust. (See 40 CFR 261.21.)

Corrosive - A liquid with a pH less than or equal to 2.0 or a pH greater than or equal to 12.5. Corrosives will eat away a standard metal container. Examples of corrosives include strong acids and bases (caustics), battery acids, paint removers and industrial degreasing solutions. (See 40 CFR 261.22.)

Reactive - Wastes that are normally unstable, react violently with water, can explode or release poisonous gases. Examples of reactive wastes are gunpowders, sodium metal, red/yellow phosphorus and wastes containing cyanides or sulfides. (See 40 CFR 261.23)

Toxic - Wastes that are harmful or fatal when ingested or absorbed. When disposed on land, contaminants may leach from the waste and pollute groundwater. Toxicity is identified through a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP). Toxic wastes exceed certain regualtory levels of volatile organic chemicals, heavy metals or pesticides when tested by the TCLP. Some toxic heavy metals are lead, cadmium, silver, chromium and mercury. Endrin, lindane, and 2,4-D are some of the pesticides named. Examples of volatile organics include benzene, chloroform, vinyl chloride and trichloroethylene. (See 40 CFR 261.24)

The requirements for managing hazardous waste vary depending on the type of waste. Wastes that are extremely toxic or reactive, such as P-listed wastes, are called acutely hazardous wastes. All P-listed wastes and some dioxin wastes are acutely hazardous wastes. Acutely hazardous wastes are regulated at smaller quantities than other wastes. Hazardous wastes which are not acutely hazardous are non-acute hazardous wastes.

To determine whether your waste is hazardous, check to see if it is on the lists of hazardous wastes or if it is a hazardous waste in Missouri. If it is not, you must find out if it exhibits one or more of the hazardous characteristics. You often can tell if your waste is hazardous by looking at label information. If the label uses terms like "flammable" or "poison," it might be a hazardous waste. Talk with your material supplier or your trade association for more help, or refer to material safety data sheets. You will also need to consider whether the waste picks up other potentially hazardous constituents through use, such as metal shavings in a cleaning solvent. If you are unsure if your waste is hazardous, you may have it tested in a laboratory.

What type of generator are you?

If your business generates hazardous waste, you must comply with the appropriate laws and regulations. The laws and regulations that apply to you depend on the amount and type of waste generated. You need to know what waste you generate and whether it is an acute or non-acute hazardous waste. You also need to know how much hazardous waste you generate each month and accumulate at any one time. Hazardous waste generator requirements can be found at 10 CSR 25-5.262. If you generate regulated quantities of hazardous waste and are required to register as a hazardous waste generator, contact the Environmental Services Program for a copy of the Notification of Regulated Waste Activity form, or access it online at www.dnr.mo.gov/forms/780-1164.pdf

There are three types of generators - Large Quantity Generator (LQG), Small Quantity Generators (SQG), and Conditionally Exempt Small Quantity Generators (CESQG). The following general guidelines can help you determine your generator status. Contact the department for more specific information.

If you generate in one month or accumulate at any one time

- more than 1 kg (2.2 pounds) of acutely hazardous waste, you are a LQG.
- 1,000 kg (2,200 pounds) or more of non-acute hazardous waste, you are a LQG
- more than 100 kg (about 220 pounds), but less than 1000 kg (2,200 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are a SQG.
- no more than 100 kg (220 pounds) of non-acute hazardous waste and less than 1 kg of acutely hazardous waste you are a CESQG.

Note: In Missouri, anyone generating 1 gram or more of dioxin waste (2,3,7,8-tetrachlorodibenzo-p-dioxin) is a LQG.

Managing Hazardous Waste

All hazardous wastes must be managed according to applicable laws and regulations. For information on proper storage, transport, disposal and recycling of hazardous waste, contact the program or office listed at the end of this fact sheet.

The Universal Waste Rule

The Universal Waste Rule became effective in Missouri as of Jan. 31, 1999. If you choose to do so, you may manage your hazardous waste batteries, pesticides, mercury-containing thermostats, mercury switches, mercury-containing thermometers and manometers and mercury-containing (fluorescent) lamps according to these regulations. The requirements of these regulations are generally less stringent than the existing hazardous waste regulations. For more information you may refer to the Universal Waste Rule Fact Sheet available from the Environmental Services Program or online at www.dnr.mo.gov/pubs/pub117.pdf

How Do I Obtain Copies of Hazardous Waste Laws and Regulations?

Copies of the Revised Statutes of Missouri are available through the Revisor of Statutes at (573) 526-1288, or are available on line at www.moga.state.mo.us. Copies of the Missouri Code of State Regulations are available through the Missouri Secretary of State at (573) 751-4015, or are available online at www.sos.missouri.gov/adrules/csr/csr.asp. Federal regulations may be viewed at federal depository libraries or may be purchased from a U.S. Government Bookstore, the U.S. Government Printing Office or from a commercial information service such as the Bureau of National Affairs. Federal Regulations are also available on line at www.access.gpo.gov/nara/cfr/index.html.

For more information call or write:

Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176, Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-3176 office
(573) 751-7869 fax
www.dnr.mo.gov/env/hwp Program Home Page

Missouri Department of Natural Resources

Waste or Product Determination Guidance

Hazardous Waste Program fact sheet 10/2006

Have you ever wondered what is the difference between a waste and a product? A product can become a waste if a facility does not properly store the material or the product is beyond its shelf life. The Missouri Department of Natural Resources has developed this fact sheet to help generators determine if a product is really a waste.

Generators must use products for their intended purpose. If a generator is no longer using the product, it must be properly disposed and not abandoned or stored. A business storing a material that is a hazardous waste must comply with Missouri's hazardous waste regulations.

This fact sheet is not intended to address materials that are hazardous waste such as waste solvents that are sent to fuel blenders or burners.

Criteria for determining if a material is a product or waste

When determining if a material in storage is a product or waste, the generator should consider the following criteria.

- The generator must be able to document the ability to use the material in a specified process. Changes in formulations, processes and equipment may make a material obsolete. Unusable material must be properly disposed of and can not be stored.
- If a facility believes that another company can use a material, that facility must document they are actively attempting to market the material. If they locate a company that is interested in using the material as a product, that company must demonstrate they can legitimately use the material in one of its processes.
- To be considered a product, materials are protected from the environment and extreme storage conditions. The environment and human health must be protected if the material is hazardous.
- To be considered a product, the facility must be able to identify the material being stored and its use. If the facility representative is unaware of what the material is or, its intended use, it should be considered a waste. Ideally, if the material is a product, the facility should track it in the inventory or accounting system.
- To be considered a product, the material must be stored as though it has value. It must be stored in accordance with guidance and warnings in the Material Safety Data Sheet, such as stored in a dry place and stored at a proper temperature. The facility should manage stored materials in accordance with its quality control policies and procedures.
- Containers used to store product must be in good condition and compatible with the material being stored. If containers are rusted, leaking, open, etc., then the material can be considered a waste because of exposure or contamination.

PUB001349

Missouri Department of Natural Resources

Special Waste

Solid Waste Management Program fact sheet 1/2007

Overview

This fact sheet provides guidance for disposal of special waste at sanitary landfills. It does not fully document other clean up or disposal options, though it touches briefly on the disposal of special waste at other types of landfills. This fact sheet does not address all aspects of compliance with any other existing federal, state or local regulatory requirements.

What is a special waste?

The Missouri Department of Natural Resources solid waste rules define special waste as "waste which is not regulated hazardous waste, which has physical or chemical characteristics, or both, that are different from municipal, demolition, construction and wood wastes and which potentially requires special handling." (Reference 10 CSR 80-2.010 (102)). The special waste designation includes a variety of wastes. Typically, a special waste is a non-hazardous industrial waste that may require special handling or consideration at the disposal area due to its characteristics. Although special wastes are often a small part of the total quantity of wastes disposed of at a sanitary landfill, they represent an endless variety. The following are examples of special wastes: contaminated soil, raw animal manure, incinerator ash, industrial or manufacturing process waste and sludge, wastewater and water treatment plant sludge and large quantities of dead animals.

Why is the Department of Natural Resources interested in special waste?

The Solid Waste Management Program (SWMP) wants special wastes handled in a manner that does not pose a present or future threat to public health or the environment. Waste must be evaluated to prevent regulated quantities of hazardous waste from being disposed of in sanitary, demolition or utility waste landfills because these facilities are not permitted or designed to accept hazardous waste. Tracking special waste disposal is also important. The landfill owner or operator and the department need to know the types and quantities of special waste disposed of, should any future problems or developments (testing) show that a waste should be handled in a more environmentally sound manner. Landfill owners or operators are responsible for the management of wastes they accept and may ultimately be liable for cleanup costs if materials accepted at the landfill pose threats to human health or the environment.

Do I have any alternatives to sending my waste to a landfill?

The Missouri Solid Waste Management Law encourages reduction and recycling as alternatives to landfill disposal. A variety of alternatives to landfill disposal exists for many types of wastes. You may find an alternative to landfill disposal through the department's Industrial Material Exchange Service of the Environmental Improvement and Energy Resources Authority (EIERA). The Industrial Material Exchange Service telephone number is (573) 751-4919. The Department of Economic Development provides a Product Finder service to put waste generators in touch with other companies that may be able to use or reuse off-specification products or other discarded materials. The Product Finder telephone number is 1-800-523-1434.

3. Determine if the waste is a characteristic hazardous waste. The waste is stable in the environment and does not catch fire easily (ignitability and reactivity) and the pH is between 2 and 12.5 (corrosivity). Since the material is a virgin product, the contaminated soil should be tested for benzene (toxicity). If the petroleum-contaminated soil is determined to be non-hazardous and contains no free liquids (paint filter analysis), it may be accepted as a special waste at a sanitary landfill. At their discretion, the landfill owner or operator may refuse any waste based on the waste's characteristics or require additional testing.

Testing for hazardous waste characteristics requires sampling at the point of generation. If the analyses detect any property characteristic of hazardous waste, you must manage the waste as a hazardous waste.

It is very important to understand that hazardous waste remains a hazardous waste when diluted or stabilized, unless it is specifically excluded from the definition of hazardous waste after the process (40 CFR 261.3). You may not dilute hazardous waste solely for the purpose of rendering it non-hazardous, unless dilution is warranted in an emergency response situation or where the dilution is part of a hazardous waste treatment process regulated or exempted under 10 CSR 25-7 or 10 CSR 25-9. You may not dispose of regulated hazardous wastes in any sanitary, demolition, utility waste or special waste landfill in Missouri.

The following table lists typical properties of characteristic hazardous waste. This is not a complete listing, but only a guideline to determine if a waste is a characteristic hazardous waste.

Ignitability
Catches fire easily through friction, absorption of moisture or spontaneous chemical changes

Corrosivity
pH$\leq$2.0 or pH$\geq$12.5

Reactivity
Wastes that are normally unstable, react violently with water, can explode or release poisonous gases.

Toxicity
TCLP, EPA Method 1311, any contaminants listed in Table 1 of 40 CFR 261.24 equal to or greater than the listed concentration.

Once the waste is determined to be non-hazardous and contain no free liquids, you must request approval from the owner/operator to dispose of the special waste at the landfill by filling out and signing the generator's portion of the *Special Waste Disposal Request Form*. You must also identify health hazards associated with the material, as well as any special shipping, handling or safety requirements. For example, note whether the material should be transported in covered containers or whether it is a respiratory hazard. The *Material Safety Data Sheet*, if one exists for the material, lists some of this information. The completed *Special Waste Disposal Request Form*, along with appropriate test results and other pertinent information, are then sent to the receiving landfill for the landfill owner or operator's review and signature prior to acceptance and disposal of the waste. Until a landfill accepts the waste for disposal, it is your responsibility to manage the waste in an environmentally sound manner. Should regulations or waste streams change to make a waste hazardous, you must handle this waste as a regulated hazardous waste.

- Yard waste
- Infectious waste as provided by 10 CSR 80-7.010

As previously mentioned, demolition landfills, utility waste landfills and special waste landfills have additional restrictions on the type of waste they can accept. Disposal of other waste requires a modification to the permit approved by SWMP prior to accepting the waste.

You must also complete and sign the landfill's portion of the *Special Waste Disposal Request Form*, verifying that the landfill will properly manage the special waste. Submit one completed form with original signatures, plus one additional copy, to the appropriate department Regional Office. You should also send a copy to the special waste generator. Maintain a copy of the completed *Special Waste Disposal Request Form* and any supporting documentation at the landfill.

You must determine which special wastes to accept. You have the right to require additional testing or reject any waste based on the special waste criteria. The department does not normally review special waste disposal requests. However, the department will provide guidance if you request it. For further information, please contact the SWMP at (573) 751-5401.

The special waste must be co-disposed with municipal solid waste on the active fill face. You may not bury special waste in a separate trench without prior written approval from the department. You may not use special waste as cover material without prior written approval from the department. You may request alternate methods of disposal by submitting a permit modification request to the SWMP.

The SWMP is required to coordinate clean up activities of State Registry sites or Hazardous Waste Sites with the Hazardous Waste Program (HWP). For more information regarding this requirement, contact the HWP at (573) 751-3176.

Direct questions pertaining to operational problems at a specific landfill to the appropriate Regional Office. Direct questions pertaining to hazardous waste determination and regulation to the HWP at (573) 751-3176.

For more information

Missouri Department of Natural Resources
Solid Waste Management Program
P.O. Box 176
Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-5401 office
(573) 526-3902 fax
www.dnr.mo.gov/env/swmp/index.html

Missouri Department of Natural Resources
Hazardous Waste Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-7869 fax
1-800-361-4827 or (573) 751-3176 office
www.dnr.mo.gov/env/hwp/index.html

Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-1300 office
(573) 526-1146 fax
www.dnr.mo.gov/env/wpp/index.html


UNIVERSAL
WASTE
05/06/11
BAD


STORAGE LABEL

HAZARDOUS WASTE

Xpert MRSA Cartridges

SX-552589099-001-01-0

Sodium Hydroxide

STORAGE LABEL

pH: > 12.5

DOT SHIPPING DESCRIPTION: Corrosive

~~UN1993,~~ WASTE ~~FLAMMABLE~~ LIQUIDS, n.o.s., ~~(XYLENE), 8, II~~

UN 1824

8, II

NaOH

MIXED WASTE

CORROSIVE/BIOHAZARD

EPA CODE: ~~HF303,D001~~ D002

WIP #: ~~826~~

PHY STATE: L

WIP DESC: ~~HISTOLOGY XYLENE FOR PTA~~

DATE ACCUMULATED: 5/5/11

HAZARDOUS WASTE - FEDERAL LAW PROHIBITS IMPROPER DISPOSAL. IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR'S NAME AND ADDRESS

GENERATOR NUMBER

ST. JOHNS REGIONAL MEDICAL CTR 552589
(ATTN: KEVIN FITZPATRICK)
2727 MCCLELLAND BOULEVARD
JOPLIN, MO 64804 (417)625-2114

GENERATOR EPA ID
MOD076262500

MERCY
SISTERS OF MERCY
HEALTH SYSTEM

Help reduce lead contaminated waste

- **While soldering, use only the sponge located at the soldering station**

  Why?

  - It can be reused almost indefinitely
  - While being used for its intended purpose the sponge is not considered waste*.

- Once discarded the sponge is hazardous waste

  - It must be disposed of through Veolia
  - Contact your supervisor to arrange the waste pickup through Environmental Services

* EPA Pub001349